

SMITHSONIAN INSTITUTION—BUREAU OF ETHNOLOGY

INTRODUCTION

TO THE

STUDY OF SIGN LANGUAGE

AMONG THE

NORTH AMERICAN INDIANS

AS

ILLUSTRATING THE GESTURE SPEECH OF MANKIND

By GARRICK V MALLERY

BREVET LIEUT. COL., U. S. ARMY

WASHINGTON
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Washington, D. C., February 12, 1880.

Eleven years ago ethnographic research among North American Indians was commenced by myself and my assistants while making explorations on the Colorado River and its tributaries. From that time to the present such investigations have been in progress.

During this time the Secretary of the Smithsonian Institution placed in my hands a large amount of material collected by its collaborators relating to Indian languages and other matters, to be used, in conjunction with the materials collected under my direction, in the preparation of a series of publications on North American Ethnology. In pursuing this work two volumes have already been published, a third is in press, and a number of others are in course of preparation.

The work originally begun as an incident to a geographical and geological survey has steadily grown in proportions until a large number of assistants and collaborators are engaged in the collection of materials and the preparation of memoirs on a variety of subjects relating to the North American Indians. The subject under investigation is of great magnitude. More than five hundred languages, belonging to about seventy distinct stocks or families, are spoken by these Indians; and in all other branches of this ethnic research a like variety of subject-matter exists. It will thus be seen that the materials for a systematic and comprehensive treatment of this subject can only be obtained by the combined labor of many men. My experience has demonstrated that a deep interest in Anthropology is widely spread among the educated people of the country, as from every hand assistance is tendered, and thus valuable material is steadily accumulating; but experience has also demonstrated that much effort is lost for want of a

of the complex nature of the subjects and methods of investigation appropriate to this branch of scientific research. For this reason a series of pamphlet publications, designed to give assistance and direction in these investigations, has been commenced.

The first of the series was prepared by myself and issued under the title of "Introduction to the Study of Indian Languages;" the second is now in press, upon Sign Language; and a third, by Dr. H. C. Yarrow, United States Army, designed to incite inquiry into mortuary observances and beliefs concerning the dead prevailing among the Indian tribes, will shortly be issued. Other publications of a like character will be prepared from time to time. These publications are intended to serve a somewhat temporary purpose until a manual for the use of students of American Anthropology is completed.

J. W. POWELL.

INQUIRIES AND SUGGESTIONS
UPON
SIGN-LANGUAGE AMONG THE NORTH AMERICAN INDIANS.

BY GARRICK MALLERY.

INTRODUCTORY.

The Bureau of Ethnology of the Smithsonian Institution has in preparation a work upon Sign-Language among the North American Indians, and, further, intended to be an exposition of the gesture-speech of mankind thorough enough to be of suggestive use to students of philology and of anthropology in general. The present paper is intended to indicate the scope of that future publication, to excite interest and invite correspondence on the subject, to submit suggestions as to desirable points and modes of observation, and to give notice of some facilities provided for description and illustration.

The material now collected and collated is sufficient to show that the importance of the subject deserves exhaustive research and presentation by scientific methods instead of being confined to the fragmentary, indefinite, and incidental publications thus far made, which have never yet been united for comparison, and are most of them difficult of access. Many of the descriptions given in the lists of earlier date than those contributed during the past year in response to special request are too curt and incomplete to assure the perfect reproduction of the sign intended, while in others the very idea or object of the sign is loosely expressed, so that for thorough and satisfactory exposition they require to be both corrected and supplemented, and therefore the coöperation of competent observers, to whom

this pamphlet is addressed, and to whom it will be mailed, is urgently requested.

The publication will mainly consist of a collation, in the form of a vocabulary, of all authentic signs, including signals made at a distance, with their description, as also that of any specially associated facial expression, set forth in language intended to be so clear, illustrations being added when necessary, that they can be reproduced by the reader. The descriptions contributed, as also the explanation or conception occurring to or ascertained by the contributors, will be given in their own words, with their own illustrations when furnished or when they can be designed from written descriptions, and always with individual credit as well as responsibility. The signs arranged in the vocabulary will be compared in their order with those of deaf-mutes, with those of foreign tribes of men, whether ancient or modern, and with the suggested radicals of languages, for assistance in which comparisons travelers and scholars are solicited to contribute in the same manner and with the same credit above mentioned. The deductions and generalizations of the editor of the work will be separate from this vocabulary, though based upon it, and some of those expressed in this preliminary paper may be modified on full information, as there is no conscious desire to maintain any preconceived theories. Intelligent criticisms will be gratefully received, considered, and given honorable place.

PRACTICAL VALUE OF SIGN-LANGUAGE.

The most obvious application of Indian sign-language will for its practical utility depend, to a large extent, upon the correctness of the view submitted by the present writer, in opposition to an opinion generally entertained, that it is not a mere semaphoric repetition of traditional signals, whether or not purely arbitrary in their origin, but is a cultivated art, founded upon principles which can be readily applied by travelers and officials so as to give them much independence of professional interpreters—a class dangerously deceitful and tricky. Possessing this art, as distinguished from a limited list of memorized motions, they would accomplish for themselves the desire of the Prince of Pontus, who begged of Nero an accomplished pantomimist from the Roman theater, to interpret among his

many-tongued subjects. This advantage is not merely theoretical, but has been demonstrated to be practical by a professor in a deaf-mute college who, lately visiting several of the wild tribes of the plains, made himself understood among all of them without knowing a word of any of their languages; nor would it only obtain in connection with American tribes, being applicable to intercourse with savages in Africa and Asia, though it is not pretended to fulfill by this agency the schoolmen's dream of an oecumenical mode of communication between all peoples in spite of their dialectic divisions.

Sign-language, being the mother utterance of nature, poetically styled by LAMARTINE the visible attitudes of the soul, is superior to all others in that it permits every one to find in nature an image to express his thoughts on the most needful matters intelligently to any other person, though it must ever henceforth be inferior in the power of formulating thoughts now attained by words, notwithstanding the boast of Roscius that he could convey more varieties of sentiment by gesture alone than Cicero could in oratory.

It is true that gestures excel in graphic and dramatic effect applied to narrative and to rhetorical exhibition; but speech, when highly cultivated, is better adapted to generalization and abstraction; therefore to logic and metaphysics. Some of the enthusiasts in signs have, however, contended that this unfavorable distinction is not from any inherent incapability, but because their employment has not been continued unto perfection, and that if they had been elaborated by the secular labor devoted to spoken language they might in resources and distinctness have exceeded many forms of the latter. GALLAUFER, PELT, and others may be right in asserting that man could by his arms, hands, and fingers, with facial and bodily accentuation, express any idea that could be conveyed by words. The process regarding abstract ideas is only a variant from that of oral speech, in which the words for the most abstract ideas, such as law, virtue, infinity, and immortality, are shown by MAX MÜLLER to have been derived and deduced, that is, abstracted from sensuous impressions. In the use of signs the countenance and manner as well as the tenor decide whether objects themselves are intended, or the forms, positions, qualities, and motions of other objects which are suggested, and signs for moral and

Intellectual ideas, founded on analogies, are common all over the world as well as among deaf-mutes. Concepts of the intangible and invisible are only formed through percepts of tangible and visible objects, whether mainly exposed to the eye or to the ear, in terms of sight or of sound.

It will be admitted that the elements of the sign-language are truly natural and universal, by recurring to which the less natural signs adopted theoretically or for expedition can, with perhaps some circumlocution, be explained. This power of interpreting itself is a peculiar advantage, for spoken languages, unless explained by gestures or indications, can only be interpreted by means of some other spoken language. There is another characteristic of the gesture-speech that, though it cannot be resorted to in the dark, nor where the attention of the person addressed has not been otherwise attracted, it has the countervailing benefit of use when the voice could not be employed. When highly cultivated its rapidity on familiar subjects exceeds that of speech and approaches to that of thought itself. This statement may be startling to those who only notice that a selected spoken word may convey in an instant a meaning for which the motions of even an expert in signs may require a much longer time, but it must be considered that oral speech is now wholly conventional, and that with the similar development of sign-language conventional expressions with hands and body could be made more quickly than with the vocal organs, because more organs could be worked at once. Without such supposed development the habitual communication between deaf-mutes and among Indians using signs is perhaps as rapid as between the ignorant class of speakers upon the same subjects, and in many instances the signs would win at a trial of speed.

Apart from their practical value for use with living members of the tribes, our native semiotics will surely help the archaeologist in his study of native picture-writing, the sole form of aboriginal records, for it was but one more step to fasten upon bark, skins, or rocks the evanescent air-pictures that still in pigments or carvings preserve their skeleton outline, and in their ideography approach the rudiments of a phonetic alphabet. Gesture-language is, in fact, not only a picture-language, but is actual writing, though dissolving and sympathetic, and neither alphabetic nor phonetic.

Though written characters are in our minds associated with speech, they are shown, by successful employment in hieroglyphs and by educated deaf-mutes, to be representative of ideas without the intervention of sounds, and so also are the outlines of signs. This will be more apparent if the motions expressing the most prominent feature, attribute, or function of an object are made, or supposed to be made, so as to leave a luminous track impressible to the eye, separate from the members producing it. The actual result is an immaterial graphic representation of visible objects and qualities which, invested with substance, has become familiar to us as the *rebus*, and also appears in the form of heraldic blazonry styled punning or "canting." The reproduction of gesture-lines in the pictographs made by our Indians seems to have been most frequent in the attempt to convey those subjective ideas which were beyond the range of an artistic skill limited to the direct representation of objects, so that the part of the pictographs, which is still the most difficult of interpretation, is precisely the one which the study of sign-language is likely to elucidate. In this connection it may be mentioned that a most interesting result has been obtained in the tentative comparison so far made between the gesture-signs of our Indians and some of the characters in the Chinese, Assyrian, Mexican, and Runic alphabets or syllabaries, and also with Egyptian hieroglyphs.

While the gesture-utterance presents no other part of grammar to the philologist besides syntax, or the grouping and sequence of its ideographic pictures, the arrangement of signs when in connected succession affords an interesting comparison with the early syntax of vocal language, and the analysis of their original conceptions, studied together with the holophrastic roots in the speech of the gesturers, may aid to ascertain some relation between concrete ideas and words. Meaning does not adhere to the phonetic presentation of thought, while it does to signs. The latter are doubtless more flexible and in that sense more mutable than words, but the ideas attached to them are persistent, and therefore there is not much greater metamorphosis in the signs than in the cognitions. The further a language has been developed from its primordial roots, which have been twisted into forms no longer suggesting any reason for their original selection, and the more the primitive significance of

and the fewer points of contact can it retain with the original. The signs of the Indians are more precise because the consciousness of the loss of most of their words is lost, so that they have no other resource for any sense agreed upon; but in our native dialects we have not advanced in that direction to the degree exhibited by the most civilized man, the connection between the idea and the word is not so obvious as that still unbroken between the idea and the word, and they remain strongly affected by the concepts of outline, form, place, position, and feature on which gesture is founded, while they are similar in their fertile combination of radicals. For these reasons the forms of sign-language adopted by our Indians will be of special value to the student of American linguistics.

A comparison sometimes drawn between sign-language and that of our Indians, founded on the statement of their common poverty in abstract expressions, is not just to either. Allusion has before been made to the capacities of the gesture-speech in that regard, and a deeper study into Indian tongues has shown that they are by no means so confined to the concrete as was once believed.

Indian language consists of a series of words that are but slightly differentiated parts of speech following each other in the order suggested in the mind of the speaker without absolute laws of arrangement, as its sentences are not completely integrated. The sentence necessitates parts of speech, and parts of speech are possible only when a language has reached that stage where sentences are logically constructed. The words of an Indian tongue being synthetic or undifferentiated parts of speech, are in this respect strictly analogous to the gesture elements which enter into a sign-language. The study of the latter is therefore valuable for comparison with the words of the speech. The one language throws much light upon the other, and neither can be studied to the best advantage without a knowledge of the other.

ORIGIN AND EXTENT OF GESTURE-SPEECH.

It is an accepted maxim that nothing is thoroughly understood unless its beginning is known. While this can never be absolutely accomplished for sign-language, it may be traced to, and claims general interest from,

its illustration of the ancient intercommunication of mankind by gesture. Many arguments have been adduced and more may be presented to prove that the latter preceded articulate speech. The corporeal movements of the lower animals to express, at least, emotion have been correlated with those of man, and classified by DARWIN as explicable on the principles of serviceable associated habits, of antithesis, and of the constitution of the nervous system. A child employs intelligent gestures long in advance of speech, although very early and persistent attempts are made to give it instruction in the latter but none in the former; it learns language only through the medium of signs; and long after familiarity with speech, consults the gestures and facial expressions of its parents and nurses as if to translate or explain their words; which facts are important in reference to the biologic law that the order of development of the individual is the same as that of the species. Persons of limited vocabulary, whether foreigners to the tongue employed, or native, but not accomplished in its use, even in the midst of a civilization where gestures are deprecated, when at fault for words resort instinctively to physical motions that are not wild nor meaningless, but picturesque and significant, though perhaps made by the gesturer for the first time; and the same is true of the most fluent talkers on occasions when the exact vocal formula desired does not at once suggest itself, or is not satisfactory without assistance from the physical machinery not embraced in the oral apparatus. Further evidence of the unconscious survival of gesture-language is afforded by the ready and involuntary response made in signs to signs when a man with the speech and habits of civilization is brought into close contact with Indians or deaf-mutes. Without having ever before seen or made one of their signs he will soon not only catch the meaning of theirs, but produce his own, which they will likewise comprehend, the power seemingly remaining latent in him until called forth by necessity. The signs used by uninstructed congenital deaf-mutes and the facial expressions and gestures of the congenitally blind also present considerations under the heads of "heredity" and "atavism," of some weight when the subjects are descended from and dwell among people who had disused gestures for generations, but of less consequence in cases such as that mentioned by Cardinal WISEMAN of an Italian blind man who, curiously

commonly used the precise signs made by his neighbors. It is further proved that semi-idiotic children who cannot be taught more than the most rudiments of speech can receive a considerable amount of knowledge through signs and express themselves by them, and that sufferers from aphasia continue to use appropriate gestures after their words are uncontrollable. In cases where men have been long in solitary confinement, been abandoned, or otherwise have become isolated from their fellows, they have lost speech entirely, in which they required to be reinstructed through gestures in the same manner that missionaries, explorers, and shipwrecked mariners became acquainted with tongues before unknown to civilization. These facts are to be considered in connection with the general law of evolution, that in cases of degeneration the last and highest acquirements are lost first.

The fact that the deaf-mute thinks without phonetic expression is a stumbling-block to MAX MÜLLER's ingenious theory of primitive speech, to the effect that man had a creative faculty giving to each conception, as it thrilled through his brain for the first time, a special phonetic expression, which faculty became extinct when its necessity ceased.

In conjecturing the first attempts of man or his hypothetical ancestor at the expression either of percepts or concepts, it is difficult to connect vocal sounds with any large number of objects, but readily conceivable that there should have been resort, next to actual touch (of which all the senses may be modifications) to suggest the characteristics of their forms and movements to the eye—fully exercised before the tongue—so soon as the arms and fingers became free for the requisite simulation or portrayal. There is no distinction between pantomime and sign-language except that the former is the parent of the latter, which is more abbreviated and less obvious. Pantomime acts movements, reproduces forms and positions, presents pictures, and manifests emotions with greater realization than any other mode of utterance. It may readily be supposed that a trogdolyte man would desire to communicate the finding of a cave in the vicinity of a pure pool, circled with soft grass, and shaded by trees bearing edible fruit. No natural sound is connected with any of those objects, but the position and size of the cave, its distance and direction, the water, its quality, and

amount, the verdant circling carpet, and the kind and height of the trees could have been made known by pantomime in the days of the mammoth, if articulate speech had not then been established, precisely as Indians or deaf-mutes would now communicate the news by the same agency or by signs possessing a natural analogy.

Independent of most of the above considerations, but from their own failures and discordancies, linguistic scholars have recently decided that both the "bow-wow" and the "ding-dong" theories are unsatisfactory; that the search for imitative, onomatopoeic, and directly expressive sounds to explain the origin of human speech has been too exclusive, and that many primordial roots of language have been founded in the involuntary sounds accompanying certain actions. As, however, the action was the essential, and the consequent or concomitant sound the accident, it would be expected that a representation or feigned reproduction of the action would have been used to express the idea before the sound associated with that action could have been separated from it. The visual onomatopoeia of gestures, which even yet have been subjected to but slight artificial corruption, would therefore serve as a key to the audible. It is also contended that in the pristine days, when the sounds of the only words yet formed had close connection with objects and the ideas directly derived from them, signs were as much more copious for communication than speech as the sight embraces more and more distinct characteristics of objects than does the sense of hearing.

The preponderance of authority is that man, when in the possession of all his faculties, did not choose between voice and gesture, both being originally instinctive, as they both are now, and never, with those faculties, was in a state where the one was used to the absolute exclusion of the other. With the voice he at first imitated the few sounds of nature, while with gesture he exhibited actions, motions, positions, forms, dimensions, directions, and distances, and their derivatives. It would appear from this unequal division of capacity that oral speech remained rudimentary long after gesture had become an art. With the concession of all purely imitative sounds and of the spontaneous action of the vocal organs under excitement, it is still true that the connection between ideas and words generally depended

upon a compact between the speaker and hearer which presupposes the existence of a prior mode of communication.

For the present purpose there is, however, no need to determine upon the priority between communication of ideas by bodily motion and by vocal articulation. It is enough to admit that the connection between them was so early and intimate that the gestures, in the wide sense indicated of presenting ideas under physical forms, had a direct formative effect upon many words; that they exhibit the earliest condition of the human mind; are traced from the farthest antiquity among all peoples possessing records; are universally prevalent in the savage stage of social evolution; survive agreeably in the scenic pantomime, and still adhere to the ordinary speech of civilized man by motions of the face, hands, head, and body, often involuntary, often purposely in illustration or emphasis.

MODERN USE OF GESTURES AND SIGNS.

The power of the visible gesture relative to and its influence upon the words of modern oral speech are perhaps, with the qualification hereafter indicated, in inverse proportion to the general culture, but do not bear that or any constant proportion to the development of the several languages with which gesture is still more or less associated. They are affected more by the sociological conditions of the speakers than by the degree of excellence of their tongue. The statement is frequently made that gesture is yet to some highly-advanced languages a necessary modifying factor, and that only when a language has become so artificial as to be completely expressible in written signs—indeed, has been remodeled through their long familiar use—can the bodily signs be wholly dispensed with. The story has been told by travelers in many parts of the world that various languages cannot be clearly understood in the dark by their possessors, using their mother tongue between themselves. The evidence for this anywhere is suspicious, and when it is, as it often has been, asserted about some of the tribes of North American Indians, it is absolutely false, and must be attributed to the error of travelers who, ignorant of the dialect, never see the natives except when trying to make themselves intelligible to their visitors by a practice which they have found by experience to have

been successful with strangers to their tongue, or perhaps when they are guarding against being overheard by others. In fact, individuals of those American tribes specially instanced in these reports as unable to converse without gesture, often, in their domestic *abandon*, wrap themselves up in robes or blankets with only breathing holes before the nose, so that no part of the body is seen, and chatter away for hours, telling long stories. If in daylight they thus voluntarily deprive themselves of the possibility of making signs, it is clear that their preference for talks around the fire at night is explicable by very natural reasons without the one attributed. The inference, once carelessly made from the free use of gesture by some of the Numa stock, that their tongue was too meager for use without signs, is refuted by the now ascertained fact that their vocabulary is remarkably copious and their parts of speech better differentiated than those of many people on whom no such stigma has been affixed. All theories, indeed, based upon the supposed poverty of American languages must be abandoned.

The true distinction is that where people speaking precisely the same dialect are not numerous, and are thrown into constant contact on equal terms with others of differing dialects and languages, gesture is necessarily resorted to for converse with the latter, and remains as a habit or accomplishment among themselves, while large bodies enjoying common speech, and either isolated from foreigners, or, when in contact with them, so dominant as to compel the learning and adoption of their own tongue, become impassive in its delivery. The undemonstrative English, long insular, and now rulers when spread over continents, may be compared with the profusely gesticulating Italians dwelling in a maze of dialects and subject for centuries either to foreign rule or to the influx of strangers on whom they depended. King Ferdinand returning to Naples after the revolt of 1821, and finding that the boisterous multitude would not allow his voice to be heard, resorted successfully to a royal address in signs, giving reproaches, threats, admonitions, pardon, and dismissal, to the entire satisfaction of the assembled *lazzaroni*, which rivalry of Punch would, in London, have occasioned measureless ridicule and disgust. The difference in what is vaguely styled temperament does not wholly explain this contrast, for the performance was

creditable both to the readiness of the King in an emergency and to the aptness of his people, the main distinction being that in Italy there was a recognized and cultivated language of signs long disused in Great Britain. As the number of dialects in any district decreases so will the gestures, though doubtless there is also influence from the fact not merely that a language has been reduced to and modified by writing, but that people who are accustomed generally to read and write, as are the English and Germans, will after a time think and talk as they write, and without the accompaniments still persistent among Hindus, Arabs, and the less literate Europeans.

Many instances are shown of the discontinuance of gesture-speech with no development in the native language of the gesturers, but from the invention for intercommunication of one used in common. The Kalapuyas of Southern Oregon until recently used a sign-language, but have gradually adopted for foreign intercourse the composite tongue, commonly called the Tsinuk or Chinook jargon, which probably arose for trade purposes on the Columbia River before the advent of Europeans, founded on the Tsinuk, Tsilali, Nutka, &c., but now enriched by English and French terms, and have nearly forgotten their old signs. The prevalence of this mongrel speech, originating in the same causes that produced the pigeon-English or *lingua-franca* of the Orient, explains the marked scantness of sign-language among the tribes of the Northwest coast. No explanation is needed for the disuse of that mode of communication when the one of surrounding civilization is recognized as necessary or important to be acquired, and gradually becomes known as the best common medium, even before it is actually spoken by many individuals of the several tribes.

IS INDIAN SIGN LANGUAGE UNIVERSAL AND IDENTICAL?

The assertion has been made by many writers, and is currently repeated by Indian traders and some Army officers, that all the tribes of North America have had and still use a *common* and *identical* sign-language of ancient origin, in which they can communicate freely without oral assistance. The fact that this remarkable statement is at variance with some of the principles of the formation and use of signs set forth by Dr. TYLOR,

whose inimitable chapters on gesture-speech in his "Researches into the Early History of Mankind" have in a great degree prompted the present inquiries, does not appear to have attracted the attention of that eminent authority. He receives the report without question, and formulates it, that "the same signs serve as a medium of converse from Hudson Bay to the Gulf of Mexico." Its truth can only be established by careful comparison of lists or vocabularies of signs taken under test conditions at widely different times and places. For this purpose lists have been collated by the writer, taken in different parts of the country at several dates, from the last century to the last month, comprising together more than eight hundred signs, many of them, however, being mere variants or synonyms for the same object or quality, and some being of small value from uncertainty in description or authority, or both.

The result of the collation and analysis thus far made is that the alleged existence of *one* universal and absolute sign-language is, in its terms of general assertion, one of the many popular errors prevailing about our aborigines. In numerous instances there is an entire discrepancy between the signs made by different bodies of Indians to express the same idea; and if any of these are regarded as determinate, or even widely conventional, and used without further devices, they will fail in conveying the desired impression to any one unskilled in gesture as an art, who had not formed the same precise conception or been instructed in the arbitrary motion. Probably none of the gestures that are found in current use are, in their origin, conventional, but are only portions, more or less elaborate, of obvious natural pantomime, and those proving efficient to convey most successfully at any time the several ideas became the most widely adopted, liable, however, to be superseded by yet more appropriate conceptions and delineations. The skill of any tribe and the copiousness of its signs are proportioned to the accidental ability of the few individuals in it who act as custodians and teachers, so that the several tribes at different times vary in their degree of proficiency, and therefore both the precise mode of semi-otic expression and the amount of its general use are always fluctuating. All the signs, even those classed as innate, were at some time invented by some one person, though by others simultaneously and independently, and

nelly of them became forgotten and were reinvented. Their prevalence and permanence were determined by the experience of their utility, and it would be hardly interesting to ascertain how long a time was required for a wholly new conception or execution to gain currency, become "the fashion," so to speak, over a large part of the continent, and to be supplanted by a new "mode."

The process is precisely the same as among the deaf-mutes. One of those, living among his speaking relatives, may invent signs which the latter are taught to understand, though strangers sometimes will not, because they may be by no means the fittest expressions. Should a dozen or more deaf-mutes, possessed only of such crude signs, come together, they will be able at first to communicate only on a few common subjects, but the number of those and the general scope of expression will be continually enlarged. They will also resort to the invention of new signs for new ideas as they arise, which will be made intelligible, if necessary, through the illustration and definition given by signs formally adopted, so that the fittest signs will be evolved, after mutual trial, and will survive. A multiplication of the numbers confined together, either of deaf-mutes or of Indians whose speech is diverse, will not decrease the resulting uniformity, though it will increase both the copiousness and the precision of the vocabulary. The only one of the correspondents of the present writer who remains demonstratively unconvinced of the diversities in Indian sign-language, perhaps became prejudiced when in charge of a reservation where Arapahos, Cheyennes, and Sioux had for a considerable time been kept secluded, so far as could be done by governmental power, from the outer world, and where naturally their signs were modified so as to become common property.

Sometimes signs, doubtless once air-pictures of the most striking outline of an object, or of the most characteristic features of an action, have in time become abbreviated and, to some extent, conventionalized among members of the same tribe and its immediate neighbors, and have not become common to them with other tribes simply because the form of abbreviation has been peculiar. In other cases, with the same conception and attempted characterization, another yet equally appropriate delineation has been selected, and when both of the differing delineations have been abbrev-

viated the diversity is vastly increased. The original conception, being independent, has necessarily also varied, because all objects have several characteristics, and what struck one set of people as the most distinctive of these would not always so impress another. From these reasons we cannot expect, without trouble, to understand the etymology of all the signs, being less rich in ancillary material than were even the old philologists, who guessed at Latin and Greek derivations before they were assisted by Sanscrit and other Aryan roots.

It is not difficult to conjecture some of the causes of the report under consideration. Explorers and officials are naturally brought into contact more closely with those persons of the tribes visited who are experts in the sign-language than with their other members, and those experts are selected, on account of their skill as interpreters, as guides to accompany the visitors. The latter also seek occasion to be present when the signs are used, whether with or without words, in intertribal councils, and then the same class of experts are the orators, for this long exercise in gesture-speech has made the Indian politicians, with no special effort, masters of the art only acquired by our public speakers after laborious apprenticeship before their mirrors. The whole theory and practice of sign-language being that all who understand its principles can make themselves mutually intelligible, the fact of the ready comprehension and response among all the skilled gesturers gives the impression of a common code. Furthermore, if the explorer learns to use any of the signs used by any of the tribes, he will probably be understood in any other by the same class of persons who will surround him in the latter, thereby confirming him in the "universal" theory. Those of the tribe who are less skilled, but who are not noticed, might be unable to catch the meaning of signs which have not been actually taught to them, just as ignorant persons among us cannot derive any sense from newly-coined words or those strange to their habitual vocabulary, which linguistic scholars would instantly understand, though never before heard, and might afterward adopt.

In order to sustain the position taken as to the existence of a general system instead of a uniform code, admitting the generic unity while denying the specific identity, and to show that this is not a distinction without

a difference, a number of specimens are extracted from the present collection of signs, which are also in some cases compared with those of deaf-mutes and with gestures made by other peoples.

AUTHORITIES FOR THE SIGNS CITED.

The signs, descriptions of which are submitted in the present paper, are taken from some one or more of the following authorities, viz:

1. A list prepared by WILLIAM DUNBAR, dated Natchez, June 30, 1800, collected from tribes then west of the Mississippi, but probably not from those very far west of that river, published in the Transactions of the American Philosophical Society, vol. vi, as read January 16, 1801, and communicated by Thomas Jefferson, president of the society.

2. The one published in 1823 in "An Account of an Expedition from Pittsburgh to the Rocky Mountains, performed in the years 1819-1820. By order of the Hon. J. C. Calhoun, Secretary of War, under the command of Maj. S. H. Long, of the United States Topographical Engineers." (Commonly called James' Long's Expedition.) This appears to have been collected chiefly by Mr. T. Say, from the Pamí, and the Kansas, Otoes, Missouris, Iowas, Omahas, and other southern branches of the great Dakota family.

3. The one collected by Prince MAXIMILIAN VON WIED-NEUWIED in 1832-34, from the Cheyenne, Shoshoni, Arikara, Satsika, and the Absaroki, the Mandans, Hidatsa, and other Northern Dakotas. This list is not published in the English edition, but appears in the German, Coblenz, 1839, and in the French, Paris, 1840. Bibliographic reference is often made to this distinguished explorer as "Prince Maximilian," as if there were not many possessors of that christian name among princely families. For brevity the reference in this paper will be "*Wied*."

4. The small collection of J. G. KOHL, made about the middle of the present century, among the Ojibwas and their neighbors around Lake Superior. Published in his "Kitchigami. Wanderings around Lake Superior," London, 1860.

5. That of the distinguished explorer, Capt. R. F. BURTON, collected in 1860-61, from the tribes met or learned of on the overland stage route,

including Southern Dakotas, Utes, Shoshoni, Arapahos, Crows, Pani, and Apaches. This is contained in "The City of the Saints," New York, 1862.

6. A manuscript list in the possession of the Bureau of Ethnology, contributed by Brevet Col. JAMES S. BRISBEN, Major Second Cavalry, United States Army, probably prepared in 1878-79, and chiefly taken from the Crows, Shoshoni, and Sioux.

7. A list prepared in July, 1879, by Mr. FRANK H. CUSHING, of the Smithsonian Institution, from continued interviews with Titchkenait-ski, an intelligent Cheyenne, now employed at that Institution, whose gestures were analyzed, their description as made dictated to a phonographer, and the more generic signs also photographed as made before the camera. The name of the Indian in reference to this list is used instead of that of the collector, as Mr. Cushing has made other contributions, to be separately noted with his name for distinctiveness.

8. A valuable and illustrated contribution from Dr. WASHINGTON MATTHEWS, Assistant Surgeon United States Army, author of "Ethnography and Philology of the Hidatsa Indians," &c., lately prepared from his notes and recollections of signs observed during his long service among the Indians of the Upper Missouri and the plains.

9. A report of Dr. W. J. HOFFMAN, from observations among the Teton Dakotas while Acting Assistant Surgeon, United States Army, and stationed at Grand River Agency, Dakota, during 1872-73.

10. A special contribution from Lieut. H. R. LEMLY, Third United States Artillery, compiled from notes and observations taken by him in 1877 among the Northern Arapahos.

11. Some preliminary notes lately received from Rev. TAYLOR F. EALY, missionary among the Zuñi, upon the signs of that body of Indians.

12. Similar notes from Rev. A. J. HOLT, Denison, Tex., respecting the Comanche signs.

13. Similar notes from Very Rev. EDWARD JACKER, Pointe St. Ignace, Mich., respecting the Ojibwa.

14. A special list from Rev. J. OWEN DORSEY, missionary at Omaha Agency, Nebraska, from observations lately made among the Ponkas and Omahas.

15. A letter from J. W. POWELL, esq., Indian superintendent, British Columbia, relating to his observations among the Kutenai and others.

16. A special letter from Dr. CHARLES E. MCCHESEY, Acting Assistant Surgeon United States Army, of signs collected among the Dakotas (Sioux) near Fort Berthold, Dakota, during the present winter.

17. A communication from Rev. JAMES A. GILLILLAN, White Earth, Minn., relating to signs observed among the Ojibwas during his long period of missionary duty, still continuing.

18. A communication from Brevet Col. RICHARD L. DODGE, Lieutenant-Colonel Twenty-third Infantry, United States Army, author of "The Plains of the Great West and their Inhabitants," &c., relating to his large experience with the Indians of the prairies.

19. A list contributed by Rev. G. L. DEFFENBAUGH, of Lapwai, Idaho, giving signs obtained at Kamiah, and used by the Sahaptin or Nez Percés.

20. Information obtained by Dr. W. J. HOFFMANN, in assisting the present writer, from NAYSHES, a Pali-Ute chief, who was one of a delegation of that tribe to Washington, in January, 1880.

21. Information from Major J. M. HAWORTH, special agent of the Indian Bureau, relating to the Comanches.

The adjunction to the descriptions of the name of the particular author, contributor, or person from whom they are severally taken (a plan which will be pursued in the final publication) not only furnishes evidence of authenticity, but indicates the locality and time of observation.

INSTANCES OF DIVERSE CONCEPTIONS AND EXECUTIONS.

Some examples have been selected of diverse conceptions and executions for the same object or thought.

Chief. Seven distinct signs.

1. Forefinger of right hand extended, passed perpendicularly downward, then turned upward in a right line as high as the head. (*Long.*) "Rising above others."

2. With forefinger of right hand, of which the other fingers are closed, pointing up, back to forehead, describe the flight of an arrow shot up and turning down again, allowing the hand to drop, the finger pointing down until about the middle of the body. (*Brislin.*) Same idea of superior

height expressed conversely. Almost the same sign, the hand, however, being moved downward rapidly and the gesture preceded by touching the lower lip with the index, the French deaf-mutes use for "command," "order."

3. The extended forefinger of the right hand, of which the other fingers are closed, is raised to the right side of the head, and above it as far as the arm can be extended, and then the hand is brought down in front of the body, with wrist bent, the back of hand in front, extended forefinger pointing downward and the others closed. "Raised above others." (*McChesney*.)

4. Begin with sign for "man;" then the forefinger of right hand points forward and downward, followed by a curved motion forward, outward, and downward. (*Titchkenmütshi*.) "He who sits still and commands others."

5. Raise the index of right hand, which is held upright; turn the index in a circle and lower it a little to the earth. (*Wied*.) "He who is the center of surrounding inferiors." The air-picture reminds of the royal scepter with its sphere.

6. Bring the closed right hand, forefinger pointing up, on a level with the face; then bring the palm of the left hand with force against the right forefinger; next send up the right hand above the head, leaving the left as it is. (*Dorsey*.)

7. The Pah-Utes distinguish the head chief of the tribe from the chief of a band. For the former they grasp the forelock with the right hand, palm backward, pass the hand upward about six inches, and hold the hair in that position a moment; and for the latter they make the same motion, but instead of holding the hair above the head they lay it down over the right temple, holding it there a moment. (*Natshes*.)

Day. Seven signs.

1. Pass the index-finger pointing along the vault of heaven from east to west. (*Kohl*.) Our deaf-mutes use the same sign.

2. Same motion with whole right hand. (*Brishin*.)

3. Same motion with forefinger of right hand crooked, followed by both hands slightly spread out and elevated to a point in front of and considerably above the head, then brought down in a semicircle to a level below the shoulder, ending with out-pedal palms upward. (*Titchkenmütshi*.) This, probably, is the opening out of the day from above, after the risen sun.

4. Simply make a circle with the forefingers of both hands. (*Barton*.) The round disk.

5. Place both hands at some distance in front of the breast, apart, and backs downward. (*Wood*.)

6. Bring both hands simultaneously from a position in front of the body, fingers extended and joined, palms down one above the other, forearms horizontal, in a circularly separating manner to their respective sides, palms up and forearms horizontal; *i. e.*, "Everything is open." (*Lendly*.)

7. Both hands raised in front of and a little higher than the head, fingers of both hands horizontal, extended, and meeting at the tips, palms of hands downward, and arms bowed; open up the hands with fingers perpendicular, and at once carry the arms out to their full extent to the sides of the body, bringing the palms up. "The opening of the day from above. The dispersion of darkness." (*McChesney*.)

The French deaf-mutes fold the hands upon each other and the breast, then raise them, palms inward, to beyond each side of the head.

To-day, this day, has four widely discrepant signs in, at least, appearance. In one, the nose is touched with the index tip, followed by a motion of the fist toward the ground (*Barton*), perhaps including the idea of "now," "here." In another, both hands are extended, palms outward, and swept slowly forward and to each side. (*Titchkemätski*.) This may combine the idea of *now* with *openness*, the first part of it resembling the general deaf-mute sign for "here" or "now."

A third observer gives as used for the idea of the present day the sign also used for "hour," viz: join the tips of the thumb and forefinger of the same hand, the interior outline approximating a circle, and let the hand pause at the proper altitude east or west of the assumed meridian. (*Lendly*.)

A fourth reports a compound sign: First make the following sign, which is that for "now." Forefinger of right hand (of which the other fingers are closed) extended, raise the arm perpendicularly a little above the right side of the head, so that the extended finger will point to the center of the heavens and then brought down on a level with the right breast, forefinger still pointing up, and immediately carry it to the position required in mak-

ing the sign for day as above (*McChesney*), which is used to complete the sign for *to-day*. (*McChesney*.)

Death, dead. Seven signs.

1. Right hand, fingers front at height of stomach, then, with a sort of flop, throw the hand over with the palm up, finger pointing a little to the right and front, hand held horizontal. (*Brislin*.) "Upset, keeled over."

2. Left hand flattened and held, back upward, thumb inward, in front of and a few inches from the breast; right hand slightly clasped, forefinger more extended than the others, and passed suddenly under the left hand, the latter being at the same time gently moved toward the breast. (*Titchkenitski*.) "Gone under."

3. Hold the left hand flat against the face, back outward; then pass the right hand, held in the same manner, under the left, striking and touching it lightly. (*Wiel*.) The same idea of "under" or "burial," quite differently executed. Dr. McChesney, however, conjectures this sign to be that of wonder or surprise at hearing of a death, but not a distinct sign for the latter.

4. Throw the forefinger from the perpendicular into a horizontal position toward the earth with the back downward. (*Long*.)

5. Place the left forefinger and thumb against the heart, act as if taking a hair from the thumb and forefinger of the left hand with the forefinger and thumb of the right and slowly cast it from you, only letting the left hand remain at the heart, and let the index-finger of the right hand point outward toward the distant horizon. (*Holt*.)

6. Palm of hand upward, then a wave-like motion toward the ground. (*Ealg*.)

7. Place the palm of the hand at a short distance from the side of the head, then withdraw it gently in an oblique downward direction, inclining the head and upper part of the body in the same direction. (*Jacker*.)

The last authority notes that there is an apparent connection between this conception and execution and the etymology of the corresponding terms in Ojibwa: "he dies," is *nibo*; "he sleeps," is *niba*. The common idea expressed by the gesture is a sinking to rest. The original significance of the root *nib* seems to be "leaning;" *nibcia*, "it is leaning;" *nibekewai*, "he inclines the head sideways." The word *niba* or *nibe* only in compounds)

and is so the idea of *Chahita*—perhaps as the falling over, the going to rest, or the going to sleep. The term for "leaf" (of a tree or plant), which is *Chahita* (*Chahita*), with the same root, leaves being the leaning or down-bent parts of the plant. With this may be compared the Chahita term for "tree hair," literally translated "tree hair".

1. Frenched at mute conception is that of gently falling or sinking, or a right index falling from the height of the right shoulder upon the left forefinger toward which the head is inclined.

Kel. In one sign the hands are held with the edges upward, and the right strikes the left transversely, as in the act of chopping. This seems to convey particularly the notion of a stroke with a tomahawk or war-club.

Leena. It is more definitely expressed as follows: The left hand, thumb up, back forwards, not very rigidly extended, is held before the chest and struck in the palm with the outer edge of the right hand. (*Matthews*.) Another sign: Smite the sinister palm earthward with the dexter fist sharply, in suggestion of going down. (*Barlow*.) Another: Strike out with the dexter fist toward the ground, meaning to shut down. (*Barlow*; *McChesney*.) This same sign is made by the Utes, with the statement that it means "to kill" or "stab" with a knife, having reference to the time when that was the most common weapon. A fourth: Pass the right under the left forefinger. (*Barlow*), "make go under." The threat, "I will kill you," appears in one case as directing the right hand toward the offender and springing the finger from the thumb as in the act of sprinkling water (*Long*), the idea being perhaps causing blood to flow, or perhaps sputtering away the life, though this part of the sign is nearly the same as that sometimes used for the discharge of a gun or arrow.

Fear, coward.

1. Both hands, with fingers turned inward opposite the lower ribs, then brought upward with a tremulous motion, as if to represent the common idea of the heart rising up to the throat. (*Darbar*.)

2. Head stooped down, and arm thrown up quickly as if to protect it.

Long.

3. Fingers and thumb of right hand, which droops downward, closed to a point to represent a heart, violently and repeatedly beaten against the

left breast just over the heart to imitate palpitation. (*Titchkenadsh*.) The Sioux use the same sign without closing the fingers to represent a heart. (*McChesney*.)

The French deaf-mutes, besides beating the heart, add a nervous backward shrinking with both hands. Our deaf-mutes omit the beating of the heart, except for excessive terror.

4. Point forward several times with the index, followed by the remaining fingers, each time drawing the index back (*Wed*), as if impossible to keep the man to the front.

5. May be signified by making the sign for a squaw, if the one in fear be a man or boy. (*Loudy*.)

6. Cross the arms over the breast, fists closed, bow the head over the crossed arms, but turn it a little to the left. (*Dorsey*.)

Woman has four signs: one expressing the mamma, one indicating shortness as compared with man, and the two most common severally indicating the longer hair or more flowing dress. The hair is sometimes indicated by a motion with the right hand as though drawing a comb through the entire length of the hair on that side of the head (*McChesney*); and sometimes by turning the right hand about the ear, as if putting the hair behind it. (*Dodge*.) The deaf-mutes generally mark the line of the bonnet-string down the cheek.

Quantity, many, much. Six wholly distinct executions and several conceptions.

1. The flat of the right hand patting the back of the left several times, proportioned in number to the quantity. (*Danbar*.) Simple repetition.

2. Clutching at the air several times with both hands. (*Kelly*.) Same idea of repetition, more objective. This sign may easily be confounded with the mode of counting or enumeration by presenting the ten digits.

3. Hands and arms passed curvilinearly outward and downward as if forming a large globe, then hands closed and elevated as if something were grasped in each, and held up as high as the face. (*Long*.)

4. Hands held scoop-fashion, palms toward each other, about two feet apart, at the height of the lower ribs, finger-ends downward; then with a diving motion, as if scooping up small articles from a sack or barrel,

bring the hands nearly together, fingers closed, as if holding a number of the small objects in each hand, and up again to the height of the breast.

Heute: The Sioux make substantially the same sign, with the difference that they begin about a foot and a half from the ground and bring the hands up to the height of the breast. (*McChesney*.)

5. Both hands closed, brought up in a curved motion toward each other to the level of the neck. (*Titchkewatski*.) Idea of fullness.

6. Move the two open hands toward each other and slightly upward. *Heute*: the action of forming or delineating a *heap*.

I myself, first personal pronoun.

Represented in some tribes by motions of the right hand upon the breast, the hand sometimes clinched and struck repeatedly on the breast—or the fingers or the index alone placed upon it. Others touch the nose-tip with the index, or lay it upon the ridge of the nose, the end resting between the eyes.

Some deaf-mutes push the forefinger against the pit of the stomach, others against the breast, and others point it to the neck for this personality.

Yes, affirmative, "it is so."

One of the signs is somewhat like "truth," but the forefinger proceeds straight forward from the breast instead of the mouth, and when at the end of its course it seems gently to strike something, as if the subject were at an end (*Loup*): no further discussion, "'nuff said," as is the vulgar phrase of agreement. Another: Quick motion of the right hand forward from the mouth, first position about six inches from the mouth and final as far again away. In the first position the index is extended, the others closed, in the final the index is loosely closed, thrown in that position as the hand is moved forward, as though hooking something with it. Palm of hand out. (*Djén-barogh*.)

Others wave both hands straight forward from the face (*Barton*), which may be compared with the forward nod common over most of the world for assent, but that gesture is not universal, as the New Zealanders elevate the head and chin, and the Turks shake it like our negative.

With others, again, the right hand is elevated to the level and in front of the shoulder, the first two fingers somewhat extended, thumb resting against the middle finger, and then a sudden motion in a curve forward

and downward. (*Titchkenutski.*) As this corresponds nearly with the sign made for "sit" by the same tribes, its conception may be that of resting upon or settling a question.

Still another variant is where the right hand, with the forefinger (only) extended, and pointing forward, is held before and near the chest. It is then moved forward one or two feet, usually with a slight curve downward. (*Matthiars.*)

Good. Six diverse signs.

1. The hand held horizontally, back upward, describes with the arm a horizontal curve outward. (*Long.*)

2. Simple horizontal movement of the right hand from the breast. (*Wied.*) These signs may convey the suggestion of level—no difficulty—and are nearly identical with one of those for "content," "glad." The first of them is like our motion of benediction, but may more suggestively be compared with several of the above signs for "yes," and in opposition to several of those below for "bad" and "no," showing the idea of acceptance or selection of objects presented, instead of their rejection.

3. With the right hand, palm down, fingers to the left, thumb touching the breast, move the hand straight to the front and slightly upward. (*Brislin.*) The Sioux make the same sign without the final upward motion. (*McChesney.*)

4. Wave the right hand from the mouth, extending the thumb from the index and closing the other three fingers. (*Barton.*)

5. The right hand, fingers pointing to the left, on a level with mouth, thumb inward, suddenly moved with curve outward, so as to present the palm to the person addressed. (*Titchkenutski.*)

These last signs appear to be connected with a pleasant taste in the mouth, as is the sign of the French and our deaf-mutes, waving thence the hand, back upward, with fingers straight and joined, in a forward and downward curve. The same gesture with hand sidewise is theirs and ours for general assent: "very well!"

6. Move the right hand, palm down, over the blanket, right and left several times. (*Dorsey.*)

Bad. The signs most common consist mainly in smartly throwing out the dexter fingers as if sprinkling water, or snapping all the fingers from the

gesture. This may be compared with the deaf-mute sign of flipping an imaginary object between the thumb-nail and the fore-finger, denoting something of little value or of little value to the speaker. The motion of snapping a finger either on or from the thumb-nail is not only of large modern prevalence in civilization, but is also the sign of the contemporary statue of Sardanapalus at Anchiade. When the hand is open, palms turned in, move one hand toward and above the head, then the other toward the body, then *vice versa*. Another less forcible but equally expressive gesture for *bad* is closing the hand and then opening while lowering it, as if dropping out the contents (*Wied: McChesney*): "not worth keeping." It becomes again more forcible in another variant, viz: the hand closed, back toward and near the breast, then as the forearm is suddenly extended the hand is opened and the fingers separated from each other. (*Matthews*.) This is the casting away of a supposed object, and the same authority connects it with *contempt* by reporting that the sign for the latter is the same, only still more forcibly made. Another sign for *contempt*, and which is the highest degree of insult, is as follows: The right hand is shut or clinched and held drawn in toward the chest and on a level with it, with the back of the hand down, and the shut fingers and thumb up, and the expression of contempt is given by extending out the hand and arm directly in front of the body, at the same time opening the thumb and fingers wide and apart, so that at the termination of the motion the arm is nearly extended, and the thumb and fingers all radiating out as it were from the center of the hand, and the palm of the hand still pointing upward. (*Gillman*.) The Neapolitans, to express contempt, blow towards the person or thing referred to. The deaf-mutes preserve the connection of "bad" and "taste" by brushing from the side of the mouth.

Understand, know, is very variously expressed by manipulations in which the nose, ear, chin, mouth, and breast are selected as objective points, all the motions being appropriate. *Think* or *guess* is also diversely indicated. Sometimes the fore-finger is simply drawn sharply across the breast from left to right. (*Barton*.) Some hit the chest with closed fist, thumb over the fist. Again, the right fist is held with the thumb between the eyes and propelled front and downward. We, for show of thought, rest the fore-finger on the forehead. There is also a less intelligible sign, in which the right hand, fingers and thumb loosely closed, index crooked and

slightly extended, is dipped o-o toward and suddenly forward from the left shoulder. (*Titchkenutski.*) All the gestures of deaf-mutes relating to intelligence are connected with the forehead.

Animals are expressed pantomimically by some characteristic of their motion or form, and the Indian mimographers generally seem to have hit upon similar signs for the several animals; but to this rule there are marked exceptions, especially in the signs for the *deer* and the *dog*. For the *deer* six signs are noted:

1. Right hand extended upward by the right ear, with a quick puff from the mouth (*Dualar*), perhaps in allusion to the fleet escape on hearing noise.
2. Make several passes with the hand before the face. (*Wick.*)
3. With the right hand in front of body on a level with the shoulder, and about eighteen inches from it, palm down, make the quick up-and-down motion with all the fingers held loosely together, as of the motion of the deer's tail when running. The wrist is fixed in making this sign. It is very expressive to any one who has ever seen the surprised deer in motion. (*McChesney.*)
4. Forefinger of right hand extended vertically, back toward breast, then turned from side to side, to imitate the motion of the animal when walking at leisure. (*Long.*)
5. Both hands, fingers irregularly outspread at the sides of the head, to imitate the outspread horns. (*Titchkenutski.*) This sign is made by our deaf-mutes.
6. Same position, confined to the thumb and two first fingers of each hand. (*Barlow.*)

The above signs all appear to be used for the animal generically, but the following are separately reported for two of the species:

Black-tailed deer [*Ovis montanus* (Say), Gray].

1. Make several passes with the hand before the face, then indicate a tail. (*Wick.*)
2. Hold the left hand pendant a short distance in front of the chest, thumb inward, finger ends approximated to each other as much as possible (*i. e.*, with the first and fourth drawn together under the second and third). Then close the right hand round the left (palm to back, and covering the

bases of the left-hand fingers) and draw them downward, still closed, until it is entirely drawn away. This sign seems to represent the act of smoothing down the fusiform tuft at the end of the animal's tail. (*Matthews*.)

White-tailed deer [*Capreolus virginianus macrurus* (Raf.), Coues].

Hold the right hand upright before the chest, all fingers but the index being bent, the palm being turned as much to the front as possible. Then wag the hand from side to side a few times rather slowly. The arm is moved scarcely, or not at all. This sign represents the motion of the deer's tail. (*Matthews*.)

For *dog*, one of the signs gives the two fore-fingers slightly opened, drawn horizontally across the breast from right to left. (*Barton*.) This would not be intelligible without knowledge of the fact that before the introduction of the horse, and even yet, the dog has been used to draw the tent-poles in moving camp, and the sign represents the trail. Indians less nomadic, who built more substantial lodges, and to whom the material for poles was less precious than on the plains, would not perhaps have comprehended this sign, and the more general one is the palm lowered as if to stroke gently in a line conforming to the animal's head and neck. It is abbreviated by simply lowering the hand to the usual height of the wolfish aboriginal breed (*Wied: Titeldkemätski*), and suggests the animal *par excellence* domesticated by the Indians and made a companion. The French and American deaf-mutes more specifically express the dog by snapping the fingers and then patting the thigh, or by patting the knee and imitating barking with the lips.

INSTANCES OF PREVALENT SIGNS.

Among the signs that are found generally current and nearly identical may be noted that for *horse*, made by the fore and middle finger of the right hand placed by some astraddle of the left forefinger and by others of the edge of the left hand, the animal being considered at first as only serviceable for riding and not for draft. Colonel Donge mentions, however, that these signs are used only by Indians to white men, their ordinary sign for *horse* being made by drawing the right hand from left to right across the body about the heart, all the fingers being closed excepting the index. It

is to be observed that this sign has a strong resemblance to the one given above by Captain BURTON for *dog*, and may have reference to the girth. It is still more easily confused with Captain BURTON'S "think, guess". The French deaf-mutes add to the straddling of the index the motion of a trot. The Utes have a special sign for *horse*—the first and little fingers of the right hand, palm down, extended forward, the balls of the remaining fingers falling down and resting upon the end of the thumb, presenting a suggestion of the animal's head and ears. Our deaf-mutes indicate the ears, followed by straddling the left hand by the fore and middle fingers of the right.

Same, similar, is made not only among our tribes generally, but by those all over the world, and by deaf-mutes, by extending the two forefingers together side by side, backs upward, sometimes moved together slightly forward. When held at rest in this position, *companion* and the tie of fellowship, what in days of chivalry was styled "brothers in arms," can be indicated, and, as a derivative also, *husband*. The French and American deaf-mutes use this sign, preceded by one showing the sex, for "brother" or "sister."

The most remarkable variant from the sign as above described which is reported to be used by our Indians, is as follows: Extend the fore and middle finger of the right hand, pointing upward, thumb crossed over the other fingers, which are closed. Move the hand downward and forward. (*Donsay*.)

An opposition to the more common sign above mentioned is given, though not generally reported, for *he*, or *another person*, by placing one straight forefinger over the other, nearly touching, and then separated with a moderately rapid motion. (*Danbar*.) The deaf-mutes for "he" point the thumb over the right shoulder.

The principal motion for *surprise, wonder*, consists in placing the right hand before the mouth, which is open, or supposed so to be—a gesture seemingly involuntary with us, and which also appears in the Egyptian hieroglyphs.

The general sign for *sun*, when it is given as distinguished from *day*—made by forming a circle with the thumb and forefinger raised to the east or along the track of the orb—is often abbreviated by simply crooking the elevated forefinger into an arc of a circle, which would more naturally be

sign for *full moon* or *new moon*. It appears that some tribes that retain the old complete circle for the sun do form a distinguishing crescent for the moon, with the thumb and forefinger, and for greater discrimination precede it with the sign for *night*. An interesting variant of the sign for *moon* is, however, reported as follows: The partly bent forefinger and thumb of the right hand are brought together at their tips so as to represent a *new moon*; and with these digits next to the face, the hand is held up toward the sky, from one to two feet from the eye and in such a manner that the glance may be directed through the opening. (*Matthews*.) The same authority gives the sign for "moon" as that for "sun," except that the tips of the finger and thumb, instead of being opposed, are approximated so as to represent a crescent. This is not preceded by the sign for *night*, which, with some occasional additions, is the crossing of both horizontally outspread palms, right above left, in front of the body, the conception being covering, shade, and consequent obscurity. With a slight differentiation, *darkness* is represented, and with another, *forget, forgotten*, that is, darkness in the memory.

Inquiry, question. What? Which? When?

This is generally denoted by the right hand held upward, palm upward, and directed toward the person interrogated, and rotated two or three times edgewise. When this motion is made, as among some tribes, with the thumb near the face, it might be mistaken for the derisive, vulgar gesture called "taking a sight," "*donner un pied de nez*," descending to our small boys from antiquity. The separate motion of the fingers in the vulgar gesture as used in our eastern cities is, however, more nearly correlated with the Indian sign for *food*. It may be noted that the Latin "*sagax*," from which is derived "*sagacity*," was chiefly used to denote the keen scent of dogs, so there is a relation established between the nasal organ and wisdom or its absence, and that "*suspendere naso*" was a classic phrase for hoaxing. The Italian expressions "*restare con un palmo di naso*," "*con tanto di naso*," &c., mentioned by the Canon De Jorio, refer to the same vulgar gesture in which the face is supposed to be thrust forward sillily. The same rotation upon the wrist, with the index and middle finger diverged over the heart, among our Indians means specifically *uncertainty, indecision*, "more than one heart for a purpose," and a variant of it appears in one of the signs for "*I*

don't know." The special inquiry "Do you know?" is reported as follows: Shake the right hand in front of the face, a little to the right, the whole arm elevated so as to throw the hand even with the face and the forearm standing almost perpendicular; principal motion with hand, slight motion of forearm, palm outward. (*Deffenbaugh.*)

The Indian sign for "inquiry" is far superior to that of the French deaf-mutes, which is the part of the French slung with the hunched shoulders omitted.

A sign for a special form of inquiry as to the tribe to which the person addressed belongs is to pass the right hand from left to right across the face, which is answered by the appropriate tribal sign. (*Powell.*)

Instead of a direct question the Utes in sign-conversation use a negative form, *e. g.*, to ask "Where is your mother?" would be rendered "Mother—your—I—see—not."

Fool, foolish. The prevailing gesture is a finger pointed to the forehead and rotated circularly—"rattle-brained." The only reported variance is where the sign for "man" is followed by shaking the fingers held downward, without reference to the head—the idea of looseness simply. French deaf-mutes shake the hands above the head after touching it with the index.

No, negative. The right hand—though in the beginning of the sign held in various positions—is generally either waved before the face (which is the sign of our deaf-mutes for emphatic negative), as if refusing to accept the idea or statement presented, or pushed sidewise to the right from either the breast or face, as if dismissing it or setting it aside. One of the signs given for the Pah-Utes by NATSIES of oscillating the index before the face from right to left is substantially the same as one reported from Naples by DE JORIO. This may be compared with our shaking of the head in denial; but that gesture is not so universal in the Old World as is popularly supposed, for the ancient Greeks, followed by the modern Turks and rustic Italians, threw the head back, instead of shaking it, for *No*. A sign differing from all the above is by making a quick motion of the open hand from the mouth forward, palm toward mouth. (*Deffenbaugh.*) The Egyptian negative hieroglyph is clearly the gesture of both hands, palms down, waved apart horizontally and apparently at the level of the elbow, between which

and the Maya negative particle "*ma*" given by LANDA there is a strong coincidence.

Lie, falsehood, is almost universally expressed by some figurative variation on the generic theme of a forked or double tongue—"two different stories"—in which the first two fingers on the right hand separate from the mouth. One reported sign precedes the latter motion by the right hand touching the breast over the heart. (*Hoffman*.) Another instance given, however, is when the index is extended from the two corners of the mouth successively. (*Laly*.) Still another is by passing the hand from right to left close by and across the mouth, with the first two fingers of the hand opened, thumb and other fingers closed. (*Dodge; Nitsches*.) A further variant employed by the Utes is made by closing the right hand and placing the tips of the first two fingers upon the ball of the extended thumb, and snapping them forward straight and separated while passing the hand from the mouth forward and to the left. In the same tribe the index is more commonly moved, held straight upward and forward, alternately toward the left and right front. "Talk two ways." *Truth, true*, is naturally contradistinguished by the use of a single finger, the index, pointing straight from the mouth forward and sometimes upward—"One tongue; speech straight to the front; no talk behind a man." Sometimes, however, the breast is the initial point, as in the French deaf-mute sign for "sincere." The deaf-mutes also gesture "truth" by moving one finger straight from the lips—"straight-forward speaking"—but distinguish "lie" by moving the finger to one side—"side-ways speaking."

Offspring or descendant, child in filial relation—not simply as young humanity—is generally denoted by a slightly varied dumb show of issuance from the loins, the line traced sometimes showing a close diagnosis of parturition. This is particularly noticeable in the following description: Place the left hand in front of the body, a little to the right, the palm downward and slightly arched; pass the extended right hand downward, forward, and upward, forming a short curve underneath the left. (*Hoffman*.) The sign, with additions, means "father," "mother," "grandparent," but its expurgated form among the French deaf-mutes means "parentage" generically, for which term there is a special sign reported from our Indians by

only one authority, viz: Place the hand bowl-shaped over the right breast, as if grasping a pap. (*Dodge*.) It is not understood how this can be distinguished from one of the signs above mentioned for "woman."

Possession, mine, my property. The essential of this common sign is clinching the right hand held at the level of the head and moving it gently forward, clearly the grasping and display of property. None of the deaf-mute signs to express "possession, ownership," known to the writer, resemble this or are as graphic. Our deaf-mutes press an imaginary object to the breast with the right hand.

Steal. The prevalent delineation is by holding the left arm horizontally across the body and seizing from under the left fist an imaginary object with the right hand (*Barton*), implying concealment and the transportation that forms part of the legal definition of larceny. This sign is also made by our deaf-mutes. Sometimes the fingers of the right hand are hooked, as if grabbing or tearing (*Titelkumitski*.) Another sign is reported in which the left arm is partly extended and held horizontally so that the left hand will be palm downward, a foot or so in front of the chest. Then, with the right hand in front, a motion is made as if something were grasped deftly in the fingers and carried rapidly along under the left arm to the axilla. (*Matthews*.) The specialty of horse-theft is indicated by the pantomime of cutting a lariat. (*Barton*.)

Trade, barter, exchange, is very commonly denoted by a sign the root of which is the movement of the two flat hands or the two forefingers past each other, so that one takes the place before held by the other, the exact conceit of exchange. One description is as follows: The hands, backs forward, are held as index-hands pointing upward, the elbows being fully bent. Each hand is then simultaneously with the other, moved to the opposite shoulder, so that the forearms cross one another almost at right angles. (*Matthews*.) Another: Pass the hands in front of the body at the height of the waist, all fingers closed except the index-fingers. (*Dodge*.) This is also made by the Comanches (*Harvey*), Bannocks, and Umatillas. (*Natshes*.) Another instance is reported where the first two fingers of the right hand cross those of the left, both being slightly spread. (*Hoffman*.) Our deaf-mutes use the same gesture as first above mentioned

with the hand, the *cut*—An invitation to a general or systematic barter or exchange is, however, one transaction, is expressed by repeated taps or the *cut*—*cut*—*cut*—*cut*. The rough resemblance of this sign to that for “cutting” (the *diamond cut*) mistakes us to its origin. It is reported by Captain Burton as the conception of one smart trader cutting into the profits of another “diamond-cut diamond.” The trade sign is, on the plains, often used to express the *white man*—vocally named Shwop—a legacy from the traders, who were the first Caucasians met. Generally, however, the gesture for *white man* is by designating the hat or head-covering of civilization. This the French deaf mutes apply to all *men*, as distinct from women.

INSTANCES OF SIGNS HAVING SPECIAL INTEREST.

A few signs have been selected which are not remarkable either for general or limited acceptance, but are of interest from special conception or peculiar figuration.

The relation of *brothers, sisters*, and of *brother and sister*, children of the same mother, is signified by putting the two first finger tips in the mouth, denoting the nourishment taken from the same breast. (*Barton; Emerson*.) One of the signs for *child* or infant is to place the thumb and fingers of the right hand against the lips, then drawing them away and bringing the right hand against the left fore-arm, as if holding an infant. (*Dunbar*.) The Cistercian monks, vowed to silence, and the Egyptian hieroglyphers, notably in the designation of Horus, their dawn-god, used the finger in or on the lips for “child.” It has been conjectured in the last instance that the gesture implied, not the mode of taking nourishment, but inability to speak—*inertness*. This conjecture, however, was only made to explain the blunder of the Greeks, who saw in the hand placed connected with the mouth in the hieroglyph of Horus (the) son, “Hor-(p)-chrot,” the gesture taken by or to themselves of a finger on the lips to express “silence,” and so mistaking both the name and the characterization, invented the God of Silence, Huplakotes. A careful examination of all the linear hieroglyphs given by Champollion (Dictionnaire Égyptien), shows that the finger or the hand to the mouth of an adult (whose posture is always distinct from that of a child) is always in connection with the positive ideas of voice, mouth, speech.

writing, eating, drinking, &c., and never with the negative idea of silence. The special character for "child" always has the above-mentioned part of the sign with reference to nourishment from the breast. An uninstructed deaf-mute, as related by Mr. Denison of the Columbia Institution, invented, to express "sister," first the sign for "female," made by the half-closed hands with the ends of fingers touching the breasts, followed by the index in the mouth.

Destroyed, all gone, no more.

The hands held horizontal and the palms rubbed together two or three times circularly; the right hand is then carried off from the other in a short horizontal curve. (*Long.*) "Rubbed out." This resembles the Edinburgh and our deaf-mute sign for "forgive" or "clemency," the rubbing out of offense. Several shades of meaning under this head are designated by varying gestures. "If something of little importance has been destroyed by accident or design, the fact is communicated by indicating the thing spoken of, and then slightly striking the palms and open fingers of the hands together, as if brushing dust off of them. If something has been destroyed by force the sign is as if breaking a stick in the two hands, throwing the pieces away, and then dusting the hands as before. The amount of force used and the completeness of the destruction are shown by greater or less vigor of action and facial expression." (*Dodge.*)

Done, finished. The hands placed edges up and down, parallel to each other, right hand outward, which is drawn back as if cutting something. (*Dunbar.*) An *cut* left after cutting is suggested; perhaps our colloquial "cut short." The French and our deaf-mutes give a cutting motion downward, with the right hand at a right angle to the left.

Glad, pleased, content. Wave the open hand outward from the breast (*Barton*), to express heart at ease—"bosom's lord sits lightly on its throne." Another gesture, perhaps noting a higher degree of happiness, is to raise the right hand from the breast in serpentine curves to above the head. (*Ward.*) "Heart beats high." Another: Extend both hands outward, palms turned downward, and make a sign exactly similar to the way women smooth a bed in making it. (*Holt.*) "Smooth and easy."

Dissatisfaction, discontent. is naturally contrasted by holding the index

may be placed before the heart and rotating the wrist several times, indicating prominence of the organ, which our aborigines, like modern Europeans, place the heart as the seat of the affections and emotions, not selecting the liver or stomach as other peoples have done with greater physiological propriety.

Touching, conceal, is graphically portrayed by placing the right hand inside the clothing of the left breast, or covering the right hand, fingers hooked, by the left, which is flat, palm downward, and held near the body. The same gestures mean "secret."

Peace, or friendship, is sometimes shown by placing the tips of the two first fingers of the right hand against the mouth and elevated upward and outward to mimic the expulsion of smoke—"we two smoke together." (*Le Nemetsli*.) It is also often rendered by the joined right and left hands, the fingers being sometimes interlocked, but others simply hook the two forefingers together. Our deaf-mutes interlock the forefingers for "friendship," clasp the hands, right uppermost, for "marriage," and make the last sign, repeated with the left hand uppermost, for "peace." The idea of union or linking is obvious. It is, however, noticeable that while this ceremonial gesture is common and ancient, the practice of shaking hands on meeting, now the annoying etiquette of the Indians in their intercourse with whites, was never used by them between each other, and is clearly a foreign importation. Their fancy for affectionate greeting was in giving a pleasant bodily sensation by rubbing each other's breasts, arms, and stomachs. The senseless and inconvenient custom of shaking hands is, indeed, by no means general throughout the world, and in the extent to which it prevails in the United States is a matter of national opprobrium.

The profession of *peace, coupled with invitation*, is often made from a distance by the acted spreading of a real or imaginary robe or blanket—"come and sit down."

The sign for *home* has an archaeological significance—the right fist being struck repeatedly upon the left palm, as would be instinctive when a stone was the only hammer.

Peace is a graphic picture. The forefinger and thumb of the left hand are held in the form of a semicircle opening toward and near the

breast, and the right forefinger, representing the prisoner, is placed upright within the curve and passed from one side to another, in order to show that it is not permitted to pass out. (*Long.*)

Soft is ingeniously expressed by first striking the open left hand several times with the back of the right, and then striking with the right the back of the left, restoring the supposed yielding substance to its former shape.

Without further multiplying examples, the conclusion is presented that the gesture-signs among our Indians show no uniformity in detail, the variety in expression among them and in their comparison with those of deaf-mutes and transatlantic mimes being in itself of psychological interest. The generalization of TYLOR that "gesture-language is substantially the same among savage tribes all over the world" must be understood, indeed would be so understood from his remarks in another connection, as referring to their common use of signs and of signs formed on the same principles, but not of the same signs to express the same ideas, even "substantially," however indefinitely that dubious adverb may be used.

GESTURE SPEECH UNIVERSAL AS AN ART.

The *attempt to convey meaning by signs is, however, universal* among the Indians of the plains, and those still comparatively unchanged by civilization, as is its successful execution as an art, which, however it may have commenced as an instinctive mental process, has been cultivated, and consists in actually pointing out objects in sight not only for designation, but for application and predication, and in suggesting others to the mind by action and the airy forms produced by action.

In no other part of the thoroughly explored world has there been spread over so vast a space so small a number of individuals divided by so many linguistic and dialectic boundaries as in North America. Many wholly distinct tongues have for a long indefinite time been confined to a few scores of speakers, verbally incomprehensible to all others on the face of the earth who did not, from some rarely operating motive, laboriously acquire their language. Even when the American race, so styled, flourished in the greatest population of which we have any evidence at least accord

ing to the published views of the present writer, which seem to have been favorably received, the immense number of languages and dialects still preserved, or known by early recorded fragments to have once existed, so subdivided it that but the dwellers in a very few villages could talk together with ease, and all were interdistributed among unresponsive vernaculars, each to the other being bar-bar-ous in every meaning of the term. It is, however, noticeable that the three great families of Iroquois, Algonkin, and Muskoki, when met by their first visitors, do not appear to have often impressed the latter with their reliance upon gesture-language to the same extent as has always been reported of the aborigines now and formerly found farther inland. If this absence of report arose from the absence of the practice and not from imperfection of observation, an explanation may be suggested from the fact that among those families there were more people dwelling near together in sociological communities, of the same speech, though with dialectic peculiarities, than became known later in the later West, and not being nomadic, their intercourse with strange tribes was less individual and conversational.

The use of gesture-signs, continued, if not originating, in necessity for communication with the outer world, became entrinally convenient from the habits of hunters, the main occupation of all savages, depending largely upon stealthy approach to game, and from the sole form of their military tactics—to surprise an enemy. In the still expanse of virgin forests, and especially in the boundless solitudes of the great plains, a slight sound can be heard over a vast area, that of the human voice being from its rarity the most startling, so that it is now, as it probably has been for centuries, a common precaution for members of a hunting or war party not to speak together when on such expeditions, communicating exclusively by signs. The required habit also exhibits itself not only in formal oratory, but in impassioned or emphatic conversation.

This domestic as well as foreign exercise for generations in the gesture-language has naturally produced great skill both in expression and reception, as to be measurably independent of any prior mutual understanding, or that in a system of signals is called preconcert. Two accomplished army signalists can, after sufficient trial, communicate without either of them learn-

ing the code in which the other was educated and which he had before practiced, one being mutually devised for the occasion, and those specially designed for secrecy are often deciphered. So, if any one of the more approximately conventional signs is not quickly comprehended, an Indian skilled in the principle of signs resorts to another expression of his flexible art, perhaps reproducing the gesture unabbreviated and made more graphic, perhaps presenting either the same or another conception or quality of the same object or idea by an original portraiture. The same tribe has, indeed, in some instances, as appears by the collected lists, a choice already furnished by tradition or importation, or recent invention or all together, of several signs for the same thought-object. Thus there are produced synonyms as well as dialects in sign-language.

The general result is that two intelligent mimes seldom fail of mutual understanding, their attention being exclusively directed to the expression of thoughts by the means of comprehension and reply equally possessed by both, without the mental confusion of conventional sounds only intelligible to one. The Indians who have been shown over the civilized East have also often succeeded in holding intercourse, by means of their invention and application of principles, in what may be called the voiceless mother utterance, with white deaf-mutes, who surely have no semiotic code more nearly connected with that attributed to the plain-roamers than is derived from their common humanity. When they met together they were found to pursue the same course as that noticed at the meeting together of deaf-mutes who were either not instructed in any methodical dialect or who had received such instruction by different methods. They seldom agreed in the signs at first presented, but soon understood them, and finished by adopting some in mutual compromise, which proved to be those most strikingly appropriate, graceful, and convenient, but there still remained in some cases a plurality of fitting signs for the same idea or object. On one of the most interesting of these occasions, at the Pennsylvania Institution for the Deaf and Dumb, in 1873, it was remarked that the signs of the deaf-mutes were much more readily understood by the Indians, who were Absureki or Crows, Arapahos, and Cheyennes, than were theirs by the deaf-mutes, and that the latter greatly excelled in pantomimic effect. This need not be sur-

It is often considered that what is to the Indian a mere adjunct or accompaniment to the natural mode of utterance, and which is to the deaf-mute the natural mode of utterance, and which gives still greater freedom from the trammel of translating words into action—instead of acting the ideas themselves—when, the sound of words being unknown, they remain still as they originated, but another kind of sign, even after the art of reading is acquired, and do not become trifles as with us.

It is to be remarked that Indians when brought to the East have shown the greatest pleasure in meeting deaf-mutes, precisely as travelers in a foreign country are rejoiced to meet persons speaking their language, with whom they can hold direct communication without the tiresome and often suspected medium of an interpreter. A Sandwich Islander, a Chinese, and the Africans from the slaver *Amistad* have, in published instances, visited our deaf-mute institutions with the same result of free and pleasurable intercourse, and an English deaf-mute had no difficulty in conversing with Laplanders. It appears, also, on the authority of *SINSCOTA*, whose treatise was published in 1679, that Cornelius Haga, ambassador of the United Provinces to the Sublime Porte, found the Sultan's mutes to have established a language among themselves in which they could discourse with a speaking interpreter, a degree of ingenuity interfering with the object of their selection as slaves unable to repeat conversation.

SUGGESTIONS TO OBSERVERS.

The most important suggestion to persons interested in the collection of signs is that they shall not too readily abandon the attempt to discover recollections of them even among tribes long exposed to Caucasian influence and officially segregated from others.

During the last week a missionary wrote that he was concluding a considerable vocabulary of signs finally procured from the Ponkas, although after residing among them for years, with thorough familiarity with their language, and after special and intelligent exertion to obtain some of their old and obscure language, he had two months ago reported it to be entirely forgotten. A similar report was made by two missionaries among the Ojibwas, though other trustworthy authorities have furnished a list of signs

obtained from that tribe. Further discouragement came from an Indian agent giving the decided statement, after four years of intercourse with the Pah-Utes, that no such thing as a communication by signs was known or even remembered by them, which, however, was less difficult to bear because on the day of the receipt of that well-intentioned missive some officers of the Bureau of Ethnology were actually talking in signs with a delegation of that very tribe of Indians then in Washington, from one of whom the Story hereinafter appearing was received. The difficulty in collecting signs may arise because Indians are often provokingly reticent about their old habits and traditions; because they do not distinctly comprehend what is sought to be obtained, and because sometimes the art, abandoned in general, only remains in the memories of a few persons influenced by special circumstances or individual fancy.

In this latter regard a comparison may be made with the old science of heraldry, once of practical use and a necessary part of a liberal education, of which hardly a score of persons in the United States have any but the vague knowledge that it once existed; yet the united memories of those persons could, in the absence of records, reproduce all essential points on the subject.

Even when the specific practice of the sign-language has been generally discontinued for more than one generation, either from the adoption of a jargon or from the common use of the tongue of the conquering English, French, or Spanish, some of the gestures formerly employed as substitutes for words may survive as a customary accompaniment to oratory or impassioned conversation, and, when ascertained, should be carefully noted. An example, among many, may be found in the fact that the now civilized Muskoki or Creeks, as mentioned by Rev. H. F. BUCKNER, when speaking of the height of children or women, illustrate their words by holding their hands at the proper elevation, palm up; but when describing the height of "soulless" animals or inanimate objects, they hold the palm downward. This, when correlated with the distinctive signs of other Indians, is an interesting case of the survival of a practice which, so far as yet reported, the oldest men of the tribe now living only remember to have once existed. It is probable that a collection of such distinctive gestures among even the

most civilized Indians would reproduce enough of their ancient system to be valuable, even if the persistent enquirer did not in his search discover some of its surviving custodians even among Chahta or Cherokee, Iroquois or Algonk, Klamath or Nulka.

Another recommendation is prompted by the fact that in the collection and description of Indian signs there is danger lest the civilized understanding of the original conception may be mistaken or forced. The liability to error is much increased when the collections are not taken directly from the Indians themselves, but are given as obtained at second-hand from white traders, trappers, and interpreters, who, through misconception in the beginning and their own introduction or modification of gestures, have produced a jargon in the sign as well as in the oral intercourse. If an Indian finds that his interlocutor insists upon understanding and using a certain sign in a particular manner, it is within the very nature, tentative and elastic, of the gesture art—both performers being on an equality—that he should adopt the one that seems to be recognized or that is pressed upon him, as with much greater difficulty he has learned and adopted many foreign terms used with whites before attempting to acquire their language, but never with his own race. Thus there is now, and perhaps always has been, what may be called a *lingua-franca* in the sign vocabulary. It may be ascertained that all the tribes of the plains having learned by experience that white visitors expect to receive certain signs really originating with the latter, use them in their intercourse, just as they sometimes do the words “squaw” and “papoose,” corruptions of the Algonkin, and once as meaningless in the present West as the English terms “woman” and “child,” but which the first pioneers, having learned them on the Atlantic coast, insisted upon as generally intelligible. This process of adaptation may be one of the explanations of the reported universal code.

It is also highly probable that signs will be invented by individual Indians who may be pressed by collectors for them to express certain ideas, which signs of course form no part of the current language; but while that fact should, if possible, be ascertained and reported, the signs so invented are not valueless merely because they are original and not traditional, if they are made in good faith and in accordance with the principles of sign-

formation. The process resembles the coining of new words to which the higher languages owe their copiousness. It is noticed in the signs invented by Indians for each new product of civilization brought to their notice. Less error will arise in this direction than from the misinterpretation of the idea intended to be conveyed by spontaneous signs.

The absurdity to which over-zeal may be exposed is illustrated by an anecdote found in several versions and in several languages, but repeated as a veritable Scotch legend by Duncan Anderson, esq., principal of the Glasgow Institution for the Deaf and Dumb, when he visited Washington in 1853.

King James I of England desiring to play a trick upon the Spanish ambassador, a man of great erudition, but who had a crotchet in his head upon sign-language, informed him that there was a distinguished professor of that science in the University at Aberdeen. The ambassador set out for that place, preceded by a letter from the King with instructions to make the best of him. There was in the town one Geordy, a butcher, blind of one eye, a fellow of much wit and drollery. Geordy is told to play the part of a professor, with the warning not to speak a word, is gowned, wigged, and placed in a chair of state, when the ambassador is shown in and they are left alone together. Presently the nobleman came out greatly pleased with the experiment, claiming that his theory was demonstrated. He said, "When I entered the room I raised one finger, to signify there is one God. He replied by raising two fingers to signify that this Being rules over two worlds, the material and the spiritual. Then I raised three fingers, to say there are three persons in the Godhead. He then closed his fingers, evidently to say these three are *one*." After this explanation on the part of the nobleman, the professors sent for the butcher and asked him what took place in the recitation-room. He appeared very angry and said, "When the crazy man entered the room where I was he raised one finger, as much as to say, I had but one eye, and I raised two fingers to signify that I could see out of my one eye as well as he could out of both of his. When he raised *three* fingers, as much as to say there were but three eyes between us, I doubled up my fist, and if he had not gone out of that room in a hurry I would have knocked him down."

It will be found that the very model of so many accurate signs is to induce the learner to utter the words, or signs, or hold talks in gesture, with one hand, while the other hand is on his own oral language if the latter is understood. The words, or signs, or the words, not the signs, should be translated by the learner, or the interpreter. It will be easy afterward to determine the meaning of each sign, and corresponds with the plan now followed by the Bureau of Ethnology for the study of the aboriginal languages, but not of that arising out of exclusively missionary purposes, which was to force a translation of the Bible from a tongue not adapted to its terms and ideas, and then to compile a grammar and dictionary from the artificial result. A little ingenuity will direct the more intelligent, or accomplished, signers to the expression of the thoughts, signs, or words, especially sought, and full orderly descriptions of such tales and talks with or even without analysis and illustration are more desired than any other form of contribution. No such descriptions of any value have been found in print, and the best one thus far obtained through the correspondence of the present writer is given below, with the hope that emulation will be excited. It is the farewell address of Kin Ch̄-ess (Squetal's), medicine-man of the Wichitas, to Missionary A. J. Holt on his departure from the Wichita Agency, in the words of the latter:

A SPEECH IN SIGNS.

He placed one hand on my breast, the other on his own, then clasped his two hands together after the manner of our congratulations,—*We are glad*. He placed one hand on me, the other on himself, then placed the first two fingers of his right hand between his lips,—*We are happy*. He placed his right hand over my heart, his left hand over his own heart, then took the first fingers of his right and left hands,—*Our hearts are linked*. He placed his right hand on me lightly, then put it to his mouth, with the knuckle's lightly against his lips, and made the motion of flipping with the knuckle's back and forth, on each flip casting the hand and arm forward, and then coming back, then bringing it back in the same position. (This repeated motion signifies "talk" or talking.) He then

his left hand remaining at his breast, and his eyes following his right,—*I go alone to a good place, but will be cut off shortly and my spirit will go away*—or will die. Placing the thumbs and forefingers again in such a position as if he held a small thread between the thumb and forefinger of each hand, and the hands touching each other, he drew his hands slowly from each other, as if he were stretching a piece of gum-elastic; then laying his right hand on me, he extended the left hand in a horizontal position, fingers extended and closed, and brought down his right hand with fingers extended and together, so as to just miss the tips of the fingers of his left hand; then placing his left forefinger and thumb against his heart, he acted as if he took a hair from the forefinger and thumb of his left hand with the forefinger and thumb of the right, and slowly cast it from him, only letting his left hand remain at his breast, and let the index-finger of the right hand point outward toward the distant horizon,—*After a long time you die*. When placing his left hand upon himself and his right hand upon me, he extended them upward over his head and clasped them there,—*We then meet in heaven*. Pointing upward, then to himself, then to me, he closed the third and little finger of his right hand, laying his thumb over them, then extending his first and second fingers about as far apart as the eyes, he brought his hand to his eyes, fingers pointing outward, and shot his hand outward,—*I see you up there*. Pointing to me, then giving the last above-described sign of “look,” then pointing to himself, he made the sign as if stretching out a piece of gum-elastic between the fingers of his left and right hands, and then made the sign of “cut-off” before described, and then extended the palm of the right hand horizontally a foot from his waist, inside downward, then suddenly threw it half over and from him, as if you were to toss a chip from the back of the hand (this is the negative sign everywhere used among these Indians),—*I would see him a long time, which should never be cut off, i. e., always*.

Pointing upward, then rubbing the back of his left hand lightly with the forefinger of his right, he again gave the negative sign,—*No Indian there* (in heaven). Pointing upward, then rubbing his forefinger over the back of my hand, he again made the negative sign,—*No white man there*. He made the same sign again, only he felt his hair

with the forefinger and thumb of his right hand, rolling the hair several times between the fingers,—*No black man in heaven.* Then rubbing the back of his hand and making the negative sign, rubbing the back of my hand and making the negative sign, feeling of one of his hairs with the thumb and forefinger of his right hand, and making the negative sign, then using both hands as if he were reaching around a hogshhead, he brought the forefinger of his right hand to the front in an upright position after their manner of counting, and said thereby,—*No Indian, no white man, no black man, all one.* Making the "hogshhead" sign, and that for "look," he placed the forefinger of each hand side by side pointing upward,—*All look the same,* or alike. Running his hands over his wild Indian costume and over my clothes, he made the "hogshhead" sign, and that for "same," and said thereby,—*All dress alike there.* Then making the "hogshhead" sign, and that for "love" (hugging his hands), he extended both hands outward, palms turned downward, and made a sign exactly similar to the way ladies smooth a bed in making it: this is the sign for "happy,"—*All will be happy alike there.* He then made the sign for "talk," and for "Father," pointing to himself and to me,—*You pray for me.* He then made the sign for "go away," pointing to me, he threw right hand over his right shoulder so his index-finger pointed behind him,—*You go away.* Calling his name he made the sign for "look" and the sign of negation after pointing to me,—*Kin Che-ess see you no more.*

The following, which is presented as a better descriptive model, was obtained by Dr. W. J. HOFFMAN, of the Bureau of Ethnology, from Nátshes, the Pah-Ute chief connected with the delegation before mentioned, and refers to an expedition made by him by direction of his father, Winne-mucca, Head Chief of the Pah-Utes, to the northern camp of his tribe, partly for the purpose of preventing the hostile outbreak of the Bannocks which occurred in 1878, and more particularly to prevent those Pah-Utes from being drawn into any difficulty with the authorities by being leagued with the Bannocks.

A STORY IN SIGNS.

(1) Clasp the right hand, leaving the index extended, pointed westward, and the thumb a little above the horizon, head thrown back with eyes closed, and the face following the direction,—*Away to the west*. (2) Touch the ground with the forefinger of the right hand,—*place*, locative. (3) the tips of the spread fingers of both hands placed against one another, pointing upward before the body, leaving a space of four or five inches between the wrists,—*house* (brush tent or camp). (4) with the right hand closed, index extended or slightly bent, tap the breast several times,—*winnow*. (5) Draw an imaginary line, with the right index toward the ground, from some distance in front of the body to a position nearer to it,—*from there I came*. (6) indicate a spot on the ground by quickly raising and depressing the right hand with the index pointing downward,—*to a stopping place*. (7) grasp the forelock with the right hand, palm to the forehead, and raise it about six inches, still holding the hair upward,—*the old folk of the tribe* (Winnemucea). (8) touch the breast with the index,—*see*. (9) the right hand held forward from the hip at the level of the elbow, closed, palm downward, with the middle finger extended and quickly moved up and down a short distance,—*telegraphed*. (10) head inclined toward the right, at the same time making movement toward and from the ear with the extended index pointing towards it,—*I heard, i. e., understood*.

(11) An imaginary line indicated with the extended and inverted index from a short distance before the body to a place on the right,—*I went*. (12) repeat gesture No. 6,—*a stopping place*. (13) inclining the head, with eyes closed, toward the right, bring the extended right hand, palm up, to within six inches of the right ear,—*where I slept*. (14) Place the spread and extended index and thumb of the right hand, palm downward, across the right side of the forehead,—*while awake* (American). (15) elevating both hands before the breast, palms forward, thumbs touching, the little finger of the right hand closed,—*awake*. (16) touch the breast with the right forefinger suddenly,—*a leap off*. (17) lowering the hand, and pointing downward and forward with the index still extended, the remaining fingers and thumb being loosely closed, indicate an imaginary line along the ground

toward the extreme right.—*act. 18* extend the forefinger of the right hand, and place the separated fore and second fingers of the left hand, and place the separated fore and second fingers of the right hand astraddle the forefinger of the left, and make a sign, *see appendix*, of movements toward the right.—*act. 19* *see appendix*, for their relative position, place then a short distance behind the right ear, the head being inclined toward that side.—*act. 20* *see appendix*, signs for *come* (No. 18) and *stop* (No. 19) three times.—*act. 21* *see appendix*, make sign No. 18, and stopping suddenly point toward the east with the extended index-finger of the right (others being closed) and follow the course of the sun until it reaches the zenith.—*arrived at noon of the 12th day.*

(22) Indicate a circle as in No. 2.—*act. 23* the hands then placed together as in No. 3, and in this position, both moved in short irregular upward and downward jerks from side to side.—*act. 24* then indicate the chief of the tribe as in No. 7,—meaning that *It was one of the camps of the chief of the tribe.*—25 Make a peculiar whistling sound of “phew” and draw the extended index of the right hand across the throat from left to right.—*act. 26* draw an imaginary line with the same extended index, pointing toward the ground, from the right to the body.—*came from the north.* (27) again make gesture No. 2.—*act. 28* and follow it twice by sign given as No. 18 forward from the body, but a short distance).—*act. 29* Rub the back of the right hand with the extended index of the left.—*Indian*, i. e. the narrator's own tribe, Puh-Uto. 30 elevate both hands side by side before the breast, palms forward, thumbs touching, then, after a short pause, close all the fingers and thumbs except the two outer fingers of the right hand.—*act. 31* again place the hands side by side with fingers all spread or separated, and move them in a horizontal curve toward the right.—*act. 32* and make the sign given as No. 25.—*act. 33* that of No. 2.—*act. 34* then join the hands as in No. 31, from the right towards the front.—*Puh-Uto's act. 35* close the right hand, leaving the index only extended, move it forward and downward from the mouth three or four times, pointing forward each time ending the movement at a different point.—*act. 36* the hands held pointing upward, fingers and thumbs separated, palms facing each other four inches apart, held in front of the body as far as possible, in the posi-

tion,—*the women* (36) (37) point toward the east with the index apparently curving downward over the horizon, then gradually elevate it to an altitude of 45°;—*talked all night and until nine o'clock next morning*, (38) bring the closed hands, with forefingers extended, upward and forward from their respective sides, and place them side by side, palms forward, in front,—*my brother*, (39) followed by the gesture, No. 18, directed toward the left and front,—*rode*, (40) by No. 7,—*the head chief*, (41) and No. 2,—*camp*.

42 Continue by placing the hands, slightly curved, palm to palm, holding them about six inches below the right ear, the head being inclined considerably in that direction,—*one sleep (night)*, (43) make sign No. 14,—*while man*, (44) raise the left hand to the level of the elbow forward from the left hip, fingers pointing upward, thumb and forefinger closed,—*three*, (45) and in this position draw them toward the body and slightly to the right,—*came*, (46) then make gesture No. 42,—*sleep*; (47) point with the right index to the eastern horizon,—*in the morning*, (48) make sign No. 14,—*while man*, (49) hold the left hand nearly at arm's length before the body, back up, thumb and forefinger closed, the remaining fingers pointing downward,—*three*, (50) with the right index-finger make gesture No. 35, the movement being directed towards the left hand,—*talked to them*, (51) motion along the ground with the left hand, from the body toward the left and front, retaining the position of the fingers just stated (in No. 49),—*they went*, (52) tap toward the ground, as in gesture No. 6, with the left hand nearly at arm's length,—*to their camp*.

(53) Make gesture No. 18 toward the front,—*I rode*, (54) extend the right hand to the left and front, and tap towards the earth several times as in sign No. 6, having the fingers and thumb collected to a point,—*camp of the white men* (55) Close both hands, with the forefingers of each partly extended and crooked, and place one on either side of the forehead, palms forward,—*cattle (a steer)*, (56) hold the left hand loosely extended, back forward, about twenty inches before the breast, and strike the back of the partly extended right hand into the left,—*shot*, (57) make a short upward curved movement with both hands, their position unchanged, over and downward toward the right,—*fell over, killed*, (58) then hold the left hand a short distance before the body at the height of the elbow, palm downward,

fingers closed, with the thumb lying over the second joint of the fore-finger, extend the flattened right hand, edge down, before the body, just by the knuckles of the left, and draw the hand towards the body, repeating the movement,—*skinned*, (59) make the sign given in No. 25,—*then*, (60) place both hands with spread fingers upward and palms forward, thumb to thumb, before the right shoulder, moving them with a tremulous motion toward the left and front,—*come in*, (61) make three short movements toward the ground in front, with the left hand, fingers loosely curved, and pointing downward,—*camp of the three white men*, (62) then with the right hand open and flattened, edge down, cut towards the body as well as to the right and left,—*cut up the meat*, (63) and make the pantomimic gesture of *handing it around to the visitors*.

(64) Make sign No. 35, the movement being directed to the left hand, as held in No. 49,—*told the white men*, (65) grasping the hair on the right side of the head with the left hand, and drawing the extended right hand with the edge towards and across the side of the head from behind forward,—*to scalp*; (66) close the right hand, leaving the index partly extended, and wave it several times quickly from side to side a short distance before the face, slightly shaking the head at the same time,—*no*, (67) make gesture No. 4,—*me*, (68) repeat No. 65,—*scalp*, (69) and raising the fore-lock high with the left hand, straighten the whole frame with a triumphant air,—*with me a great chief*. (70) Close the right hand with the index fully extended, place the tip to the mouth and direct it firmly forward and downward toward the ground,—*stop*, (71) then placing the hands, pointing upward, side by side, thumbs touching, and all the fingers separated, move them from near the breast outward toward the right, palms facing that direction at termination of movement,—*the Batavicks went to one side*, (72) with the right hand closed, index curved, palm downward, point toward the western horizon, and at arm's length dip the finger downward,—*then says I*, (73) make the gesture given as No. 14,—*white men*, (74) pointing to the heart as in No. 4,—*and I*, (75) conclude by making gesture No. 18 from near body toward the left, four times, at the end of each movement the hands remaining in the same position, thrown slightly upward,—*we four are tied in horsehair*.

The above was paraphrased orally by the narrator as follows: Hearing of the trouble in the north, I started eastward from my camp in Western Nevada, when, upon arriving at Winnemucca Station, I received telegraphic orders from the head chief to go north to induce our bands in that region to escape the approaching difficulties with the Bannocks. I started for Camp McDermitt, where I remained one night. Leaving next morning in company with nine others, we rode on for four days and a half. Soon after our arrival at the Pab-Ute camp, two Bannocks came in, when I sent twelve Pab-Utes to their camp to ask them all to come in to hold council. These messengers soon returned, when I collected all the Pab-Utes and talked to them all night regarding the dangers of an alliance with the Bannocks and of their continuance in that locality. Next morning I sent my brother to the chief, Winnemucca, with a report of proceedings.

On the following day three white men rode into camp, who had come up to aid in persuading the Pab-Utes to move away from the border. Next morning I consulted with them respecting future operations, after which they went away a short distance to their camp. I then followed them, where I shot and killed a steer, and while skimming it the Bannocks came in, when the meat was distributed. The Bannocks being disposed to become violent at any moment, the white men became alarmed, when I told them that rather than allow them to be scalped I would be scalped myself in defending them, for which action I would be considered as great a chief as Winnemucca by my people. When I told the Bannocks to cease threatening the white men they all moved to one side a short distance to hold a war council, and after the sun went down the white men and I mounted our horses and fled toward the south, whence we came.

Some of the above signs seem to require explanation. Nátshes was facing the west during the whole of this narration, and by the right he signified the north: this will explain the significance of his gesture to the right in Nos. 11 and 17, and to the left in No. 75.

No. 2 (repeated in Nos. 22, 27, 33, and 41), designates an Indian brush lodge, and although Nátshes has not occupied one for some years, the gesture illustrates the original conception in the round form of the foundation of poles, branches, and brush, the interlacing of which in the construction

of the wick'-i-up has survived in gestures Nos. 3 and 23 (the latter referring to more than one, *i. e.*, an encampment).

The sign for Bannock, No. 25 (also 32 and 59), has its origin from the tradition among the Pah-Utes that the Bannocks were in the habit of cutting the throats of their victims. This sign is made with the index instead of the similar gesture with the flat hand, which among several tribes denotes the Sioux, but the Pah-Utes examined had no specific sign for that body of Indians, not having been in sufficient contact with them.

"A stopping place," referred to in Nos. 6, 12, 52, and 54, represents the settlement, station, or camp of white men, and is contradistinguished by merely dotting toward the ground instead of indicating a circle.

It will also be seen that in several instances, after indicating the nationality, the fingers previously used in representing the number were repeated without its previously accompanying specific gesture, as in No. 61, where the three fingers of the left hand represented the men (white), and the three movements toward the ground signified the camp or tents of the three (white) men.

This also occurs in the gesture (Nos. 59, 60, and 71) employed for the Bannocks, which, having been once specified, is used subsequently without its specific preceding sign for the tribe represented.

The rapid connection of the signs Nos. 57 and 58, and of Nos. 74 and 75 indicates the conjunction, so that they are severally readily understood as "shot *and* killed," and "the white men *and* I." The same remark applies to Nos. 15 and 16, "the nine *and* I."

In the examination of the sign-language it is important to form a clear distinction between signs proper and symbols. All characters in Indian picture-writing have been loosely styled symbols, and as there is no logical distinction between the characters impressed with enduring form, and when merely outlined in the ambient air, all Indian gestures, motions, and attitudes might with equal appropriateness be called symbolic. While, however, all symbols come under the generic head of signs, very few signs are in accurate classification symbols. S. T. COLERIDGE has defined a symbol to be a sign included in the idea it represents. This may be intelligible if it is intended that an ordinary sign is extraneous to the concept, and, rather

then directly suggested by it, is invented to express it by some representation or analogy, while a symbol may be evolved by a process of thought from the concept itself; but it is no very exhaustive or practically useful distinction. Symbols are less obvious and more artificial than mere signs, require convention, are not only abstract, but metaphysical, and often need explanation from history, religion, and customs. Our symbols of the ark, dove, olive branch, and rainbow would be wholly meaningless to people unfamiliar with the Mosaic or some similar cosmology, as would be the cross and the crescent to those ignorant of history. The last-named objects appeared in the lower class of *emblems* when used in designating the conflicting powers of Christendom and Islamism. Emblems do not necessarily require any analogy between the objects representing and those, or the qualities, represented, but may arise from pure accident. After a scurrilous jest the beggar's wallet became the emblem of the confederated nobles, the Gueux, of the Netherlands; and a sling, in the early minority of Louis XIV, was adopted from the refrain of a song by the Frondeur opponents of Mazarin. The several tribal signs for the Sioux, Arapaho, Cheyenne, &c., are their emblems precisely as the star-spangled flag is that of the United States, but there is nothing symbolic in any of them. So the signs for individual chiefs, when not merely translations of their names, are emblematic of their family totems or personal distinctions, and are no more symbols than are the distinctive shoulder-straps of army officers. The *crux ansata* and the circle formed by a snake biting its tail are symbols, but consensus as well as invention was necessary for their establishment, and our Indians have produced nothing so esoteric, nothing which they intended for hermeneutics distinct from mnemonic purposes. Sign-language can undoubtedly be employed to express highly metaphysical ideas, indeed is so employed by educated deaf-mutes, but to do that in a system requires a development of the mode of expression consequent upon a similar development of the mental idiocracy of the gesturers far beyond any yet found among historic tribes north of Mexico. A very few of their signs may at first appear to be symbolic, yet even those on closer examination will probably be relegated to the class of emblems, as was the case of that for "Partisan" given by the Prince of Wild. By that title he meant, as indeed was the common

expression of the Canadian voyageurs, a leader of an occasional or volunteer war party, and the sign he reports as follows: "Make first the sign of the pipe, afterwards open the thumb and index-finger of the right hand, back of the hand outward, and move it forward and upward in a curve." This is explained by the author's account in a different connection, that to become recognized as a leader of such a war party as above mentioned, the first act among the tribes using the sign was the consecration, by fasting succeeded by feasting, of a medicine pipe without ornament, which the leader of the expedition afterward bore before him as his badge of authority, and it therefore naturally became an emblematic sign. There may be interest in noting that the "Calendar of the Dakota Nation" (Bulletin U. S. G. and G. Survey, vol. iii, No. 1), gives a figure (No. 13, A. D. 1812) showing "One Feather," a Sioux chief who raised in that year a large war party against the Crows, which fact is simply denoted by his holding out demonstratively an unornamented pipe. The point urged is that while any sign or emblem can be converted by convention into a symbol, or be explained as such by perverted ingenuity, it is futile to seek for symbolism in the stage of aboriginal development, and to interpret the conception of particular signs by that form of psychologic exuberance were to fall into mooning mysticism. This was shown by a correspondent of the present writer, who enthusiastically lauded the Dakota Calendar (edited by the latter, and a mere figuration of successive occurrences) as a numerical exposition of the great doctrines of the Sun religion in the equations of time, and proved to his own satisfaction that our Indians preserved hermeneutically the lost geometric cults of pre-Cushite scientists. He might as well have deciphered it as the tabulated dynasties of the pre-Adamite kings.

A lesson was learned by the writer as to the abbreviation of signs, and the possibility of discovering the original meaning of those most obscure, from the attempts of a Cheyenne to convey the idea of *old man*. He held his right hand forward, bent at elbow, fingers and thumb closed sidewise. This not conveying any sense he found a long stick, bent his back, and supported his frame in a tottering step by the stick held, as was before only imagined. There at once was decrepit age dependent on a staff. The

principle of abbreviation or reduction may be illustrated by supposing a person, under circumstances forbidding the use of the voice, seeking to call attention to a particular bird on a tree, and failing to do so by mere indication. Descriptive signs are resorted to, perhaps suggesting the bill and wings of the bird, its manner of clinging to the twig with its feet, its size by seeming to hold it between the hands, its color by pointing to objects of the same hue; perhaps by the action of shooting into a tree, picking up the supposed fallen game, and plucking feathers. These are continued until understood, and if one sign or group of signs proves to be successful that will be repeated on the next occasion by both persons engaged, and when becoming familiar between them and others will be more and more abbreviated. To this degree only, when the signs of the Indians have from ideographic form become demotic, are they conventional, and none of them are arbitrary, but in them, as in all his actions, man had at first a definite meaning or purpose, together with method in their after changes or modifications. The formation and reception of signs upon a generally understood principle, by which they may be comprehended when seen for the first time, has been before noticed as one of the causes of the report of a common code, as out of a variety of gestures, each appropriate to express a particular idea, an observer may readily have met the same one in several localities.

It were needless to suggest to any qualified observer that there is in the gesture-speech no organized sentence such as is integrated in the languages of civilization, and that he must not look for articles or particles or passive voice or case or grammatic gender, or even what we use as a substantive or a verb, as a subject or a predicate, or as qualifiers or inflexions. The sign radicals, without being specifically any of our parts of speech, may be all of them in turn. He will find no part of grammar beyond the pictorial grouping which may be classed under the scholastic head of syntax, but that exception is sufficiently important to make it desirable that specimens of narratives and speeches in the exact order of their gesticulation should be reported. The want before mentioned, of a sufficiently complete and exact collection of tales and talks in the sign-language of the Indians, leaves it impossible to dwell now upon their syntax, but the subject has received much discussion in connection with the order of deaf-mute

signs as compared with oral speech, some notes of which, condensed from the speculations of VALADE and others, are as follows:

In mimic construction there are to be considered both the order in which the signs succeed one another and the relative positions in which they are made, the latter remaining longer in the memory than the former, and spoken language may sometimes in its early infancy have reproduced the ideas of a sign-picture without commencing from the same point. So the order, as in Greek and Latin, is very variable. In nations among whom the alphabet was introduced without the intermediary to any impressive degree of picture-writing, the order being, 1, language of signs, almost superseded by, 2, spoken language, and, 3, alphabetic writing, men would write in the order in which they had been accustomed to speak. But if at a time when spoken language was still rudimentary, intercourse being mainly carried on by signs, figurative writing was invented, the order of the figures will be the order of the signs, and the same order will pass into the spoken language. Hence LEINITZ says truly that "the writing of the Chinese might seem to have been invented by a deaf person." Their oral language has not known the phases which have given to the Indo-European tongues their formation and grammatical parts. In the latter, signs were conquered by speech, while in the former, speech received the yoke.

If the collocation of the figures of Indians taking the place of our sentences shall establish no rule of construction, it will at least show the natural order of ideas in the aboriginal mind and the several modes of inversion by which they pass from the known to the unknown, beginning with the dominant idea or that supposed to be best known. So far as studied by the present writer the Indian sign-utterance, as well as that natural to deaf-mutes, appears to retain the characteristic of pantomime in giving first the principal figure, and in adding the accessories successively, the ideographic expressions being in the ideological order.

As of sentences so of words, strictly known as such, there can be no accurate translation. So far from the signs representing words as logographs, they do not in their presentation of the ideas of actions, objects, and events, under physical forms, even suggest words, which must be skillfully fitted to them by the glossarist and laboriously derived from them by

the philologist. The use of words in formulation, still more in terminology, is so wide a departure from primitive conditions as to be incompatible with the only primordial language yet discovered. No dictionary of signs will be exhaustive for the simple reason that the signs are exhaustless, nor will it be exact because there cannot be a correspondence between signs and words taken individually. Words and signs both change their meaning from the context. A single word may express a complex idea, to be fully rendered only by a group of signs, and, *vice versa*, a single sign may suffice for a number of words. The list annexed to the present pamphlet is by no means intended for exact translation, but as a suggestion of headings or titles of signs arranged alphabetically for mere convenience.

It will be interesting to ascertain the varying extent of familiarity with sign-language among the members of the several tribes, how large a proportion possess any skill in it, the average amount of their vocabulary, the degree to which women become proficient, and the age at which children commence its practice. The statement is made by Titchkemátski that the Kaiowa and Comanche women know nothing of the sign-language, while the Cheyenne women are versed in it. As he is a Cheyenne, however, he may not have a large circle of feminine acquaintances beyond his own tribe, and his negative testimony is not valuable. A more general assertion is that the signs used by males and females are different, though mutually understood, and some minor points of observation may be indicated, such as whether the commencement of counting upon the fingers is upon those of the right or the left hand, and whether Indians take pains to look toward the south when suggesting the course of the sun, which would give the motion from left to right.

CLASSIFICATION AND ANALYSIS.

An important division of the deaf-mute signs is into *natural* and *methodical*, the latter being sometimes called artificial and stigmatized as parasitical. But signs may be artificial—that is, natural, but improved and enriched by art—and even arbitrary, without being strictly what is termed methodical, the latter being part of the instruction of deaf-mutes, founded upon spoken languages, and adapted to the words and grammatical forms of those lan-

guages. This division is not appropriate to the signs of Indians, which are all natural in this sense, and in their beauty, grace, and impressiveness. In another meaning of "natural," given by deaf-mute authorities, it has little distinction from "innate," and still another, "conveying the meaning at first sight," is hardly definite.

The signs of our Indians may be divided, in accordance with the mode of their consideration, into innate (generally emotional) and invented; into developed and abridged; into radical and derivative; and into, 1. Indicative, as directly as possible of the object intended; 2. Imitative, representing it by configurative drawing; 3. Operative, referring to actions; and 4. Expressive, being chiefly facial. As they are rhetorically as well as directly figurative, they may be classified under the tropes of metaphor, synecdoche, metonymy, and catachresis, with as much or as little advantage as has been gained by the labeling in text-books of our figures of articulate speech.

The most useful division, however, for the analysis and report with which collectors are concerned is into *single* and *compound*, each including a number of subordinate groups, examples of which will be useful. Some of those here submitted are taken from the selected list before introduced to discriminate between the alleged universality of the signs themselves and of their use as an art, and the examples of deaf-mute signs have been extracted from those given for the same purpose by Mgr. D. DE HARVEY in his admirable analysis of those signs, which also has been used so far as applicable. Those will be equally illustrative, both the Indian and deaf-mute signs being but dialects of a common stock, and while all the examples might be taken from the collection of Indian signs already made, the main object of the present work is to verify and correct that collection rather than to publish more of it than necessary, with possible perpetuation of error in some details.

SINGLE SIGNS

Single signs have been often styled "simple," which term is objectionable because liable to be confounded with the idea of "plain," in which sense nearly all Indian signs, being natural, are simple. They are such

show only one phase or quality of the object signified. The following are the principal forms which they take:

1. *Imitative representation of the object to be described.* This is the Imitative division before mentioned. All the signs for "I, myself" given above are examples, and another is the wetting of the tip of the finger by acrobates to indicate humidity, the species being in the latter case used for "I, myself."

2. *Outlining the outlines of the object, or more generally a part of the outlines.* The Imitative or configurative division of signs reappears in this class and the one following. Example: The above sign for "dog," which conforms to the outline of its head and back.

3. *Imitation of the condition or of the action.*

a. Imitation of the condition or state of being. Under this form come nearly all the designations of size and measure. See some under "Quantity," above.

b. Imitation of the action, or of activity in connection with the object. Most of the ideas which we express by verbs come in this category, but in sign-language they are as properly substantives or adjectives. They may be Imitative when the action, as of "eating," is simulated in pantomime; or Operative, as when "walking" is actually performed by taking steps; or Expressive, as when "grief," "weeping," appears in facial play.

4. *The contact had with the object, or the manner of using it.* For "break" an imaginary stick may be snapped and the two parts looked at as if separated. (See above signs for "destroyed," *Dodge*.) A knife and most other utensils are expressed by their use.

5. *One part taken for the whole, or particular signs made to represent all the signs of an object.*

This class has reference to synecdoche. The Cheyenne sign for "old age" given above is an example.

6. *If an object is produced or prepared.*

Here is metonymy representing the cause for the effect. An example may be found among us when a still wine is indicated by the action of pulling a cork from a bottle, effervescent champagne by cutting the wires, and coffee by the imaginary grinding of the berry.

7. $T = \frac{1}{2} \pi \sqrt{\frac{m}{k}}$ where m is the mass of the particle and k is the spring constant or stiffness of the spring.

Here $\frac{1}{2} \pi$ is the angle in radians which corresponds to 90° . The expression for the period of a simple harmonic oscillator has that of a pendulum. In fact, the period of a simple harmonic oscillator is similarly indicated.

8. $T = 2\pi \sqrt{\frac{m}{k}}$ where m is the mass of the particle and k is the spring constant.

In this case, m is the mass of the particle and k is the spring constant. The expression for the period of a simple harmonic oscillator has that of a pendulum. In fact, the period of a simple harmonic oscillator is similarly indicated.

The expression for the period of a simple harmonic oscillator has that of a pendulum. It is laterally the other way round. The expression for the period of a simple harmonic oscillator has that of a pendulum. In fact, the period of a simple harmonic oscillator is similarly indicated.

CONTENTS

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2. *Several parts or specific marks.* "Hail" is shown by the sign for "white," then its falling rapidly from above and striking head, arms, &c., or by signs for "rain" and "hard."

3. *Origin or source, and use of the object* (for the object itself, by metonymy). A pen would once have been understood by the sign for "goose," before mentioned, followed by the action of writing.

4. *Effects for causes* (also by metonymy). For "wind" blow with the mouth and make with the hands the motion of the wind in a determined direction.

5. *Form and use.*

The family of signs composing this category is very numerous. The *form* is generally traced with the forefinger of the right hand in space, or by the deaf-mutes sometimes upon a surface represented by the left hand open; but the latter device, *i. e.*, of using the left hand as a supposed drafting surface, has not been reported of the Indians. The *use*, or employment, is expressed by the position of the hands or arms, or by a pantomimic movement of the whole body. A good example is "hospital," composed of "house," "sick," and "many."

6. *Outline of the object and the place where it is found.* Example: The horns drawn from the head in one of the signs given above for "deer," (*Titchkenutski*.)

7. *Shape, and one or more specific marks.* Other signs given for "deer" may be instanced.

8. *Way of using and specific marks of the object.* "Chalk" would be distinguished from "pen," before given, by the sign of "white," followed by the action of writing.

9. *Shape, mode of using, and specific marks.* "Paper" would be shown by tracing its length and breadth, if necessary by the motion of folding, succeeded by that of writing, and, to make it still more distinct, by "white."

10. *End for which an object is used, or its make, and the place where it is found.* Example: "Sword," by drawing from a supposed sheath and striking; and "milk," by signs for "white," "milking," and "drinking."

11. *Place and specific mark.* The deaf-mute shows "spider" by opening

all the fingers of both hands, pointing with the left hand to a wall, then to a corner in the wall shown by the index of the right.

12. *Place, manner of using, or mode of arrangement.* The pantomime of putting on shoes or stockings by whites or moccasins by Indians indicates those articles.

13. *Negation of the reverse of what it is desired to describe.* Examples: "Fool—no," given above, would be "wise." "Good—no," would be "bad." This mode of expression is very frequent, and has led observers to report the absence of positive signs for the ideas negatived, with sometimes as little propriety as if when an ordinary speaker chose to use the negative form "not good," it should be inferred that he was ignorant of the word "bad."

14. *Attenuation or diminution of an object stronger or greater than that which it is desired to represent, and the converse.* *Damp* would be "wet—little"; *cool*, "cold—little"; *hot*, "warm—much." In this connection it may be noted that the degree of motion sometimes indicates a different shade of meaning, of which the graduation of the signs for "bad" and "contempt" (*Matthews*) is an instance, but is more frequently used for emphasis, as is the raising of the voice in speech or italicizing and capitalizing in print. The meaning of the same motion is often modified, individualized, or accentuated by associated facial changes and postures of the body not essential to the sign, which emotional changes and postures are at once the most difficult to describe and the most interesting when intelligently reported, not only because they infuse life into the skeleton sign, but because they may belong to the class of innate expressions. Facial variations are not confined to use in distinguishing synonyms, but amazing successes have been recorded in which long narratives have been communicated between deaf-mates wholly by play of the features, the hands and arms being tied for the experiment.

There remains to be mentioned as worthy of attention the principle of *opposition*, as between the right and left hands, and between the thumb and forefinger and the little finger, which appears among Indians in some expressions for "above," "below," "forward," "back," but is not so common as among the methodical, distinguished from the natural signs of deaf-mutes. This principle is illustrated by the following remarks of Col. Deane,

which also bear upon the subdivision last above mentioned: "Above" is indicated by holding the left hand horizontal, and in front of the body, fingers open, but joined together, palm upward. The right hand is then placed horizontal, fingers open but joined, palm downward, an inch or more above the left, and raised and lowered a few inches several times, the left hand being perfectly still. If the thing indicated as "above" is only a *little* above, this concludes the sign, but if it be *considerably* above, the right hand is raised higher and higher as the height to be expressed is greater, until, if *enormously* above, the Indian will raise his right hand as high as possible, and, fixing his eyes on the zenith, emit a duplicate grunt, the more prolonged as he desires to express the greater height. All this time the left hand is held perfectly motionless. "Below" is exactly the same, except that all movement is made by the left or lower hand, the right being held motionless, palm downward, and the eyes looking down.

The code of the Cistercian monks was based in large part on a system of opposition which would more likely be wrought out by an intentional process of invention than by spontaneous figuration, and is rather of mnemonic than suggestive value. They made two fingers at the right side of the nose stand for "friend," and the same at the left side for "enemy," by some fanciful connection with right and wrong, and placed the little finger on the tip of the nose for "fool" merely because it had been decided to put the forefinger there for "wise man."

DETAILS OF DESCRIPTION AND ILLUSTRATION.

The signs of the Indians appear to consist of motions rather than positions—a fact enhancing the difficulty both of their description and illustration—and the motions are generally large and free, seldom minute. It seems also to be the general rule among Indians as among deaf-mutes that the point of the finger is used to trace outlines and the palm of the hand to describe surfaces. From an examination of the identical signs made for the same object by Indians of the same tribe and band to each other, they appear to make most gestures with little regard to the position of the fingers and to vary in such arrangement from individual taste. Some of the elaborate descriptions, giving with great detail the attitude of the fingers of any

particular gesturer and the inches traced by his motions, are of as little necessity as would be a careful reproduction of the flourishes of titled letters and the thickness of down-strokes in individual chirography when quoting a written word. The fingers must be in *some* position, but that is frequently accidental, not contributing to the general and essential effect, and there is a custom or "fashion" in which not only different tribes, but different persons in the same tribe gesture the same sign with different degrees of beauty, for there is calligraphy in sign-language, though no recognized orthography. It is nevertheless better to describe and illustrate with unnecessary minuteness than to fail in reporting a real differentiation. There are, also, in fact, many signs formed by mere positions of the fingers, some of which are abbreviations, but in others the arrangement of the fingers in itself forms a picture. An instance of the latter is one of the signs given for the "bear," viz. middle and third finger of right hand clasped down by the thumb, fore and little finger extended crooked downward. (*Titlakenait-kli.*) This reproduction of the animal's peculiar claws, with the hand in any position relative to the body, would suffice without the pantomime of scratching in the air, which is added only if it should not be at once comprehended. In order to provide for such cases of minute representation a sheet of "TYPES OF HAND POSITIONS" has been prepared, and if none of them exactly correspond to a sign observed, the one most nearly corresponding can be readily altered by a few strokes of pen or pencil. The sheet of "OUTLINES OF ARM POSITIONS," giving front and side figures with arms pendent, is also presented as a labor-saving device. The directions upon these sheets, as illustrated by the sheet of "EXAMPLES," which concludes this pamphlet, are, it is hoped, sufficiently ample to show their proposed use, and copies of them, to any requisite number, will cheerfully be mailed, together with official stamps for return postage on contributions, by application to the address given below.

LIST OF SIGNS DESIRED.

The following is a condensed list, prepared for the use of observers, of the headings under which the gesture-signs of the North American Indians have been collated for comparison with each other and with those of deaf-

mites and of foreign tribes of men, and not intended to be translated into a mere vocabulary, the nature of the elementary principles governing the combinations in the two modes of expression being diverse. Many synonyms have been omitted which will readily fall into place when a sign for them may be noticed, and it is probable that many of them, depending upon the context and upon facial expression will be separately distinguished only with great difficulty. Even when the specific practice of the sign-language has been discontinued, the gesture formerly used for a sign as substitute for words may survive as a customary accompaniment to oratory or impassioned conversation, therefore should be noted. The asterisk prefixed to some of the words indicates those for which the signs or gestures made are specially desired—in some cases for their supposed intrinsic value, and in others on account of the incompleteness of their description as yet obtained, but it is not intended that signs corresponding with the words without an asterisk will not be welcomed. Observers should only regard this list as suggestive, and it is hoped, will add all signs that may be considered by them to be of interest. Those for many animals and utensils, weapons, articles of clothing, and similar common objects, have been omitted from the list because the number of them of a merely configurative or pantomimic character in the present collection was sufficient in comparison with their value, but when any distinct conception for them in signs is remarked it should be contributed.

Printed forms and outlines similar to those shown at the end of this pamphlet, prepared to diminish the labor of description and illustration, will be furnished on request mailed to

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Bureau of Ethnology, Smithsonian Institution,
P. O. Box 585, Washington, D. C.

* Above.
 Add, To; more.
 Admiration.
 Anger.
 Arrow.

Arrow, To hit with an.
 Autumn, fall.
 Battle.
 Bear.
 Beaver.

* Before.
 * Beginning; commence-
 ment.
 * Behind.
 * Below; under.

Big.	East.	Gun shot.
Bison, (buffalo.)	End, done.	Hair.
Black.	Enough.	Halt!
Blue.	Equal.	* Halt: a stopping-place.
Boat, canoe.	Exchange.	Hard.
Bow, weapon.	Fail, To.	* Hate.
Brave.	Far.	He: another person; they.
Break, broken.	Fat, of a person.	Hear, heard.
Bring to me; or to us.	Fat, of meat.	Heavy.
Broad.	Fear.	* Help, To: to assist.
Brother.	—, a coward; cowardice.	* Here.
Capture, To.	Female, applied to animals.	Hide: to conceal; secret.
Chief.	Fight.	High: as a hill.
—, War.	Fire, flame.	Hill.
Child; baby, infant.	Flat.	* Honest.
—, offspring.	Flour.	* Horror.
Clear.	Fly, To.	* Humble, humility.
Clothing: buffalo-robe or skin.	Fool, foolish.	Hunting, for game.
—, woolen blanket.	Forest.	Husband.
Cloud.	* Forever, always.	I: personal pronoun.
Cold: it is cold.	Forget: forgotten.	lee.
Come; arrive; coming.	Found: discovered.	* Imprudent, rash.
— come back.	Friend.	* In: within.
— come here.	Frost.	Indecision, doubt.
Companion.	Full, as a box or sack.	Kill, killing.
* Comparison; more, most.	* Future, to come (in time).	Kind.
* Contempt.	Gap: cañon.	Know, To.
Content, satisfaction.	* Generous.	— I know.
* Cross; sulky.	Girl.	— I do not know.
* Danger.	Give, to me or to us.	Lance; spear.
Daughter.	Glad; joy.	Large, great in extent.
Day.	Go; go away.	— in quantity.
— to-day.	God.	* Leaves, of a tree.
— to-morrow.	Good.	Lie, falsehood.
— yesterday.	* Gone; departed.	Lie, down.
Dead; death.	* —, lost, spent.	Light, daylight.
Deer.	Grandmother.	— in weight.
* Defiance.	Grass.	Lightning.
* Destroyed, ruined.	* Gray.	Listen, To.
* Different, contrasted.	Grease.	Little: small in quantity.
Discontent, dissatisfaction.	Great.	—, in size.
* Disgust.	Green.	Lodge: tepee; wigwam.
Dog.	Grief, sorrow.	— Entering a.
Drink; drinking.	* Grow, To.	Long, in extent of surface.
Earth, ground.	Gum.	— in lapse of time.
	—, To hit with a.	Look! See!

TYPES OF HAND POSITIONS IN GESTURE-LANGUAGE.



A—First finger extended forward, palm up.



B—First finger extended backward, oblique, palm up.



C—Clenched, with thumb extended against forefinger, upright, edge outward.



D—Clenched, ball of thumb against middle of forefinger, oblique, upward, palm down.



E—Thumb extended against side of forefinger, oblique, palm up.



F—Hooked, thumb against side of forefinger, oblique, palm outward.



G—Fingers resting against ball of thumb, back upward.



H—Arched, thumb horizontal against end of forefinger, back upward.



I—End of forefinger extended, palm up, point outward.



J—Forefinger straight, upright, others closed, edge outward.



K—Forefinger obliquely extended upward, others closed, edge outward.



L—Thumb vertical, forefinger horizontal, others closed, edge outward.



M—Thumb and first two fingers curved upward, palm up.



N—Thumb and first two fingers curved upward, palm down.

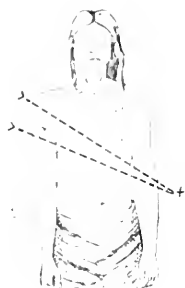


O—Thumb, first and second fingers straight upward, others curved edge outward.



P—Fingers and thumb partially curved upward, knuckles outward.

EXAMPLES.



Word or idea expressed by sign: To cut, with an axe.

DESCRIPTION:

With the right hand flattened (X changed to right instead of left), palm upward, move it downward to the left side repeatedly from different elevations, ending each stroke at the same point.

Conception or origin: From the act of felling a tree.



Word or idea expressed by sign: A lie.

DESCRIPTION:

Touch the left breast over the heart, and pass the hand forward from the mouth, the two first fingers only being extended and slightly separated (L, 1—with thumb resting on third finger).

Conception or origin: Double-tongued.



L, 1.



Word or idea expressed by sign: To ride.

DESCRIPTION:

Place the first two fingers of the right hand, thumb extended (N, 1) downward, astraddle the first two joined and straight fingers of the left (L, 1), sidewise, to the right, then make several short arched movements forward with hands so joined.

Conception or origin: The horse mounted and in motion.



N, 1.



T, 1.

..... Dotted lines indicate movements to place the hand and arm in position to commence the sign and not forming part of it.

> Indicates commencement of movement in representing sign, or part of sign.

----- Dashes indicate the course of hand employed in the sign.

X Represents the termination of movements.

————— Used in connection with dashes, shows the course of the latter when not otherwise intelligible.

